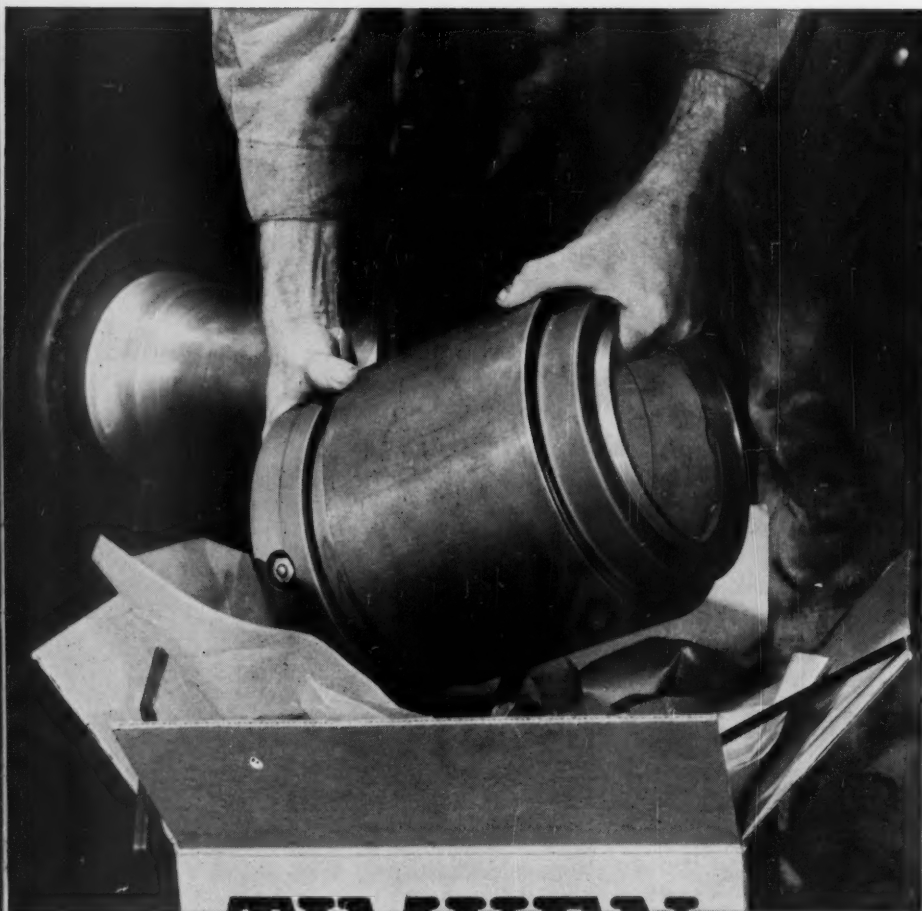


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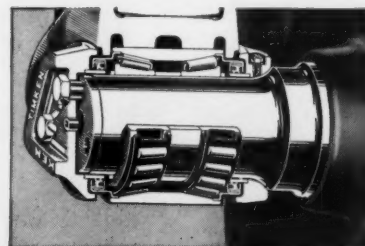
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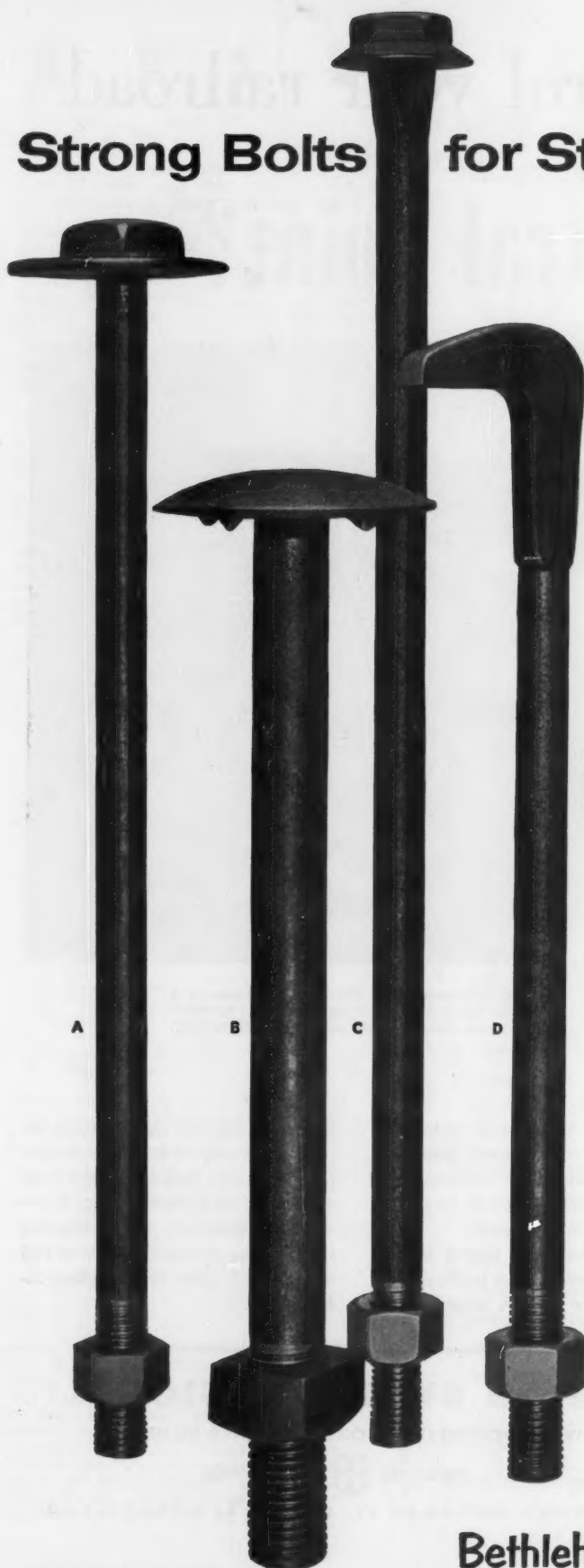
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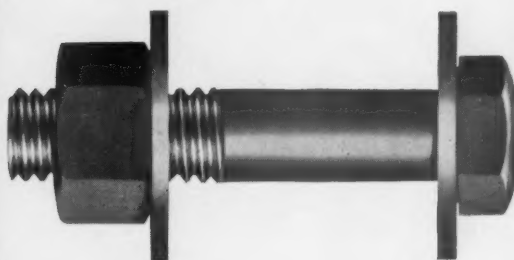
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June 27, 1955

Vol. 138, No. 26

## Week at a Glance

**"There is a general shortage of freight cars,"** IC Commissioner Arpaia said recently, in an Oregon speech. Action is being taken to overcome it, he declared; meantime, shippers can help by avoiding the wasteful practices which some of them have adopted to cover their own car requirements. **8**

**FORUM: Is cost-finding necessary or desirable?** British railways seem to consider it so; despite its recognizable dangers, it appears to be inevitable here as well. **33**

**Traffic lights protect crossings** in a busy switching area in downtown Richmond—and give the C&O a handsome return on its investment in crossing and switching signals and in radio to assist in controlling them. **34**

**What cost factors in rates?** Elements and processes to be considered are outlined by S. W. Fairweather, vice-president of the Canadian National, which has pioneered in the field. **37**

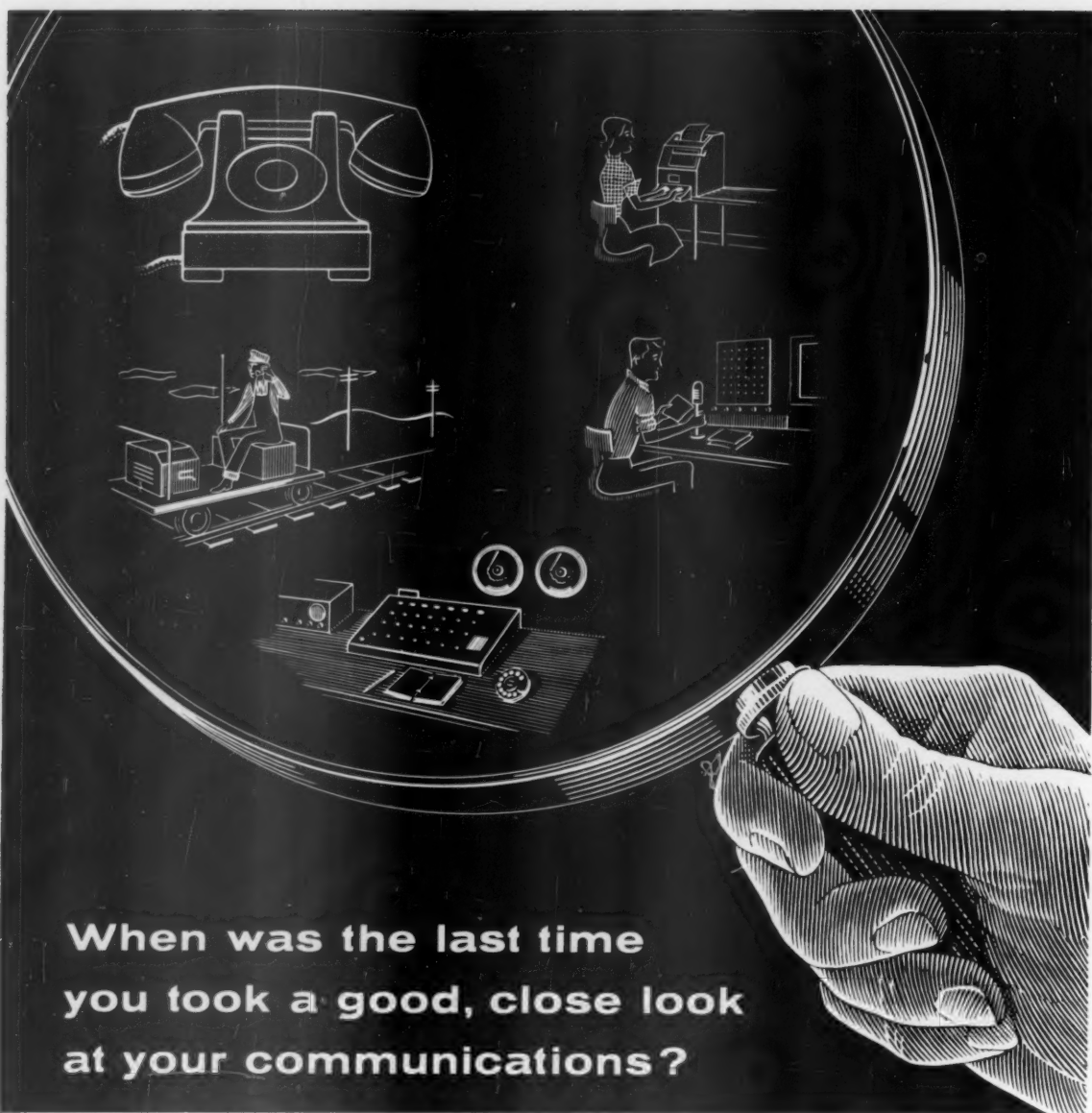
**A new way to build box cars**—and a new welding arrangement—are being used in the Great Northern's St. Cloud shop. **40**

**An ultrasonic detector car**, developed by the Santa Fe, is said to spot rail flaws at speeds up to 16 mph. **46**

**A two-front strategy** describes the job faced by railroad public relations officers. One task is to win within the industry itself greater recognition for "PR's" importance; the other is to rally public support for the Weeks committee's report. **51**

## BRIEFS

**Whether General Motors will go into quantity production** of its new lightweight passenger train, or license



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## Current Statistics

Operating revenues, four months	
1955 .....	\$3,094,856,784
1954 .....	3,028,533,293
Operating expenses, four months	
1955 .....	\$2,365,972,521
1954 .....	2,446,063,802
Taxes, four months	
1955 .....	\$ 327,344,975
1954 .....	296,160,835
Net railway operating income, four months	
1955 .....	\$ 319,554,764
1954 .....	204,981,565
Net income, estimated, four months	
1955 .....	\$ 243,000,000
1954 .....	132,000,000
Average price railroad stocks	
June 21, 1955 .....	98.46
June 22, 1954 .....	66.71
Carloadings, revenue freight	
Twenty-three weeks, 1955 ....	15,717,082
Twenty-three weeks, 1954 ....	14,462,870
Average daily freight car surplus	
Wk. ended June 18, 1955....	7,531
Wk. ended June 19, 1954....	82,109
Average daily freight car shortage	
Wk. ended June 18, 1955....	10,856
Wk. ended June 19, 1954....	893
Freight cars on order	
June 1, 1955 .....	16,886
June 1, 1954 .....	15,615
Freight cars delivered	
Five months, 1955 .....	14,096
Five months, 1954 .....	20,952
Average number of railroad employees	
Mid-May 1955 .....	1,049,114
Mid-May 1954 .....	1,062,414

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## Week at a Glance CONTINUED

other car builders to do the job instead, appears yet undecided. In all probability, the decision will hinge upon success of the pilot train (*Railway Age*, June 20, page 7), and the way it is received by the railroad industry.

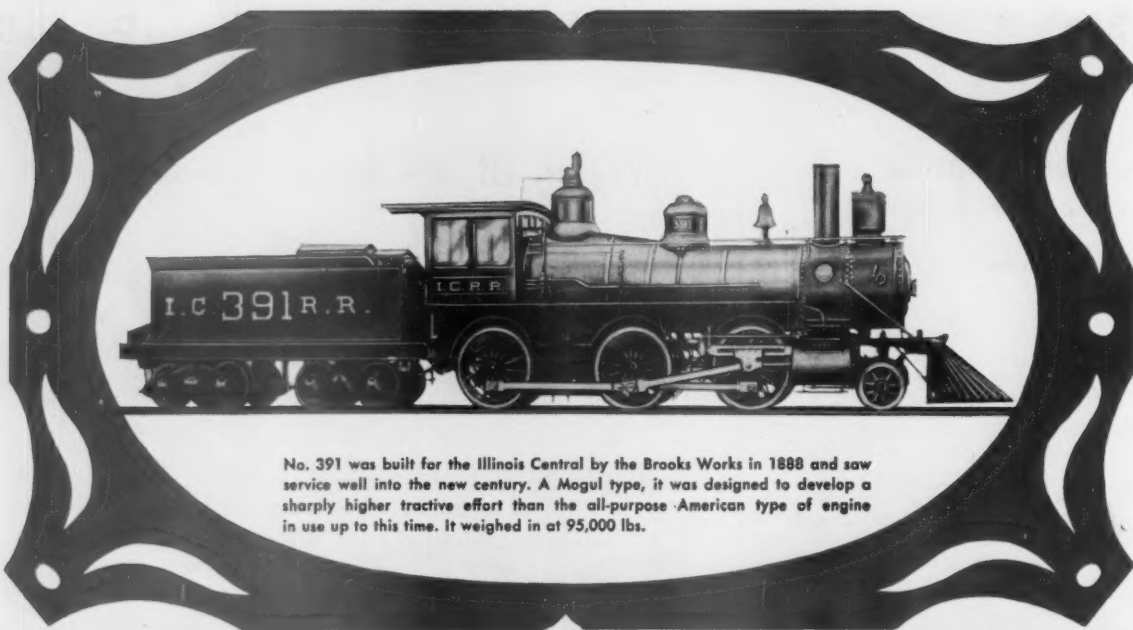
It cost Class I railroads an average of \$1.44 to get \$1 of diner and buffet-service revenue last year. This has been reported by the ICC's Bureau of Transport Economics and Statistics, which showed it as a diner expense-to-revenue ratio of 143.9. The 1953 ratio was 137.8, and the 1954 ratios of large roads ranged from the New Haven's 106.9 to the Union Pacific's 203.5.

Class I intercity truckers carried 3.9% fewer tons in 1954 than in 1953. The decline in tons carried by the railroads was relatively three times as great—12%.

Very high speed rapid transit equipment, with a top speed between 70 and 75 mph, will be tested this summer by the Chicago Transit Authority. Two test trains of two cars each have resulted from experimental work by CTA, the St. Louis Car Company, the General Electric Company and the Westinghouse Electric Corporation.

"The report [of the President's Cabinet Committee] is particularly encouraging because its provisions will benefit all common carriers—trucks, waterways and railroads—by giving these carriers a greater degree of competitive equality with contract and private carriers. . . . Not only will the public benefit, but the government will have on tap a well-gearred common carrier transportation system ready to perform at peak efficiency for national defense if and when the call comes."—*Gardner A. Caverly, president, Rutland.*

Average capital invested per worker as of 1952 for the major kinds of business ranged from \$52,000 for electric and gas utilities to \$8,000 for trade, according to the Twentieth Century Fund. Railroads averaged \$24,000; manufacturing as a whole, \$14,000.



No. 391 was built for the Illinois Central by the Brooks Works in 1888 and saw service well into the new century. A Mogul type, it was designed to develop a sharply higher tractive effort than the all-purpose American type of engine in use up to this time. It weighed in at 95,000 lbs.



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**COBLAX**—traction motor gear  
 lube  
**VARISOL**—Stoddard Solvent  
**SOLVLESSO**—Aromatic solvent  
**ESSO Weed Killer**  
**ESSO Hotbox Compound**  
**AROX**—pneumatic tool lube

**CYLESSO**—valve oil  
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# "Modernized" Service Will Pay

Agents, at meeting of Freight Station Section, are told that "new adaptions" in freight service are needed to help keep industry progressive

A call for new adaptions in railroad freight service, for "bold deeds and actions" to keep the industry progressive, highlighted this year's meeting of the AAR's Freight Station Section in Chicago, June 14-16.

"We must keep our line of goods in modern dress and ahead of our competition," D. W. Brosnan, operating vice-president of the Southern, declared.

Mr. Brosnan, who spoke at the opening session of the three-day meeting, said that if railroads are to survive they must be useful to the public. They must, he declared, provide service at a price the public will pay. "We must think carefully about our problems, and then act boldly on the indicated answers," he said.

"The agent is the railroad in countless villages and towns throughout the nation," Mr. Brosnan added. He is in a key position to create goodwill by providing courteous, prompt service, and he can, at the same time, help in the railroad battle against costs by seeking out and eliminating "useless non-productive practices."

The Southern officer joined R. G. May, vice-president, Operations and Maintenance departments, of the AAR,

in addressing members of the section. It was the section's first meeting in two years, the 1954 session having been cancelled because of the decline in traffic. Attendance this year was almost 800.

Mr. May told members of the organization that, if railroads are allowed more favorable regulatory treatment, there is no limit to the progress the industry can make.

**Freedom Needed**—"Railroads need the freedom to haul large volumes at rates that reflect today's competitive equality," Mr. May declared. He said the "top item" in the recent Cabinet Committee report on transportation is the recommendation that regulated carriers be given greater freedom in rate making. Rail carriers should be able to make good use of their "built-in advantages," he said.

"If one form of transportation—not just a railroad but any type of carrier—is able because of inherent, natural advantages to haul a given commodity between given points satisfactorily and at a rate lower than that of competing forms of transportation, and the rate meets the test of being compensatory, then why shouldn't the low-cost carrier have the business and why

shouldn't the public have the saving?," Mr. May asked.

**Loss and Damage**—Major committee reports docketed at the Chicago meeting included those on loss and damage prevention, station and terminal operation, station office operation and station traffic.

C. A. Naffziger, director of the AAR's Freight Loss & Damage Prevention Section, commented on the need to get over "to the man on the ground" the importance of preventing damage. In a speech preceding the L&D report, he said the "true cost" of lost and damaged freight in 1954 was perhaps \$500 million. He called on the agents to campaign against the "little everyday items,"—a single protruding nail, for example—which can cause so much damage.

Other speakers were F. J. Orner, chairman of the section's Committee on Motor Transportation, and assistant vice-president of the New Haven; and G. H. Hill, director of less-carload research for the AAR.

The recently formed motor transportation committee "is very much concerned" with developments in trailer-on-flat car service, Mr. Orner reported. He said his committee is looking ahead to the time when "generalized interchange may be anticipated."

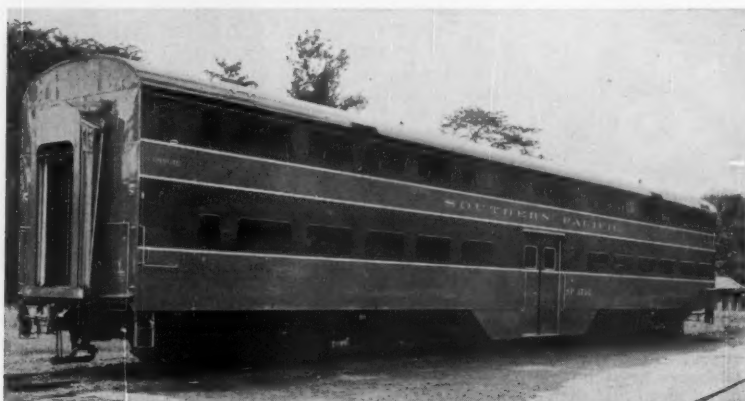
The committee, meanwhile, is surveying railroads with a 6-point questionnaire on T-O-F-C service. Purpose of the survey, Mr. Orner said, is to develop information on types of service; facilities used; kinds of flat cars, highway trailers and tie-down equipment in use; techniques of operation, including interchange problems; and the degree of interdepartmental cooperation that has been required.

Mr. Hill told the section members that while he had heard of many instances of improved LCL service in the past year much remains to be done.

"We have competition today that is quick to exploit our deficiencies in service to their advantage," he declared. "It is little comfort to a shipper or receiver to be told that our delayed movements of LCL traffic have been eliminated or reduced when we deliver a shipment that has been badly delayed or mishandled. Under such circumstances, this shipper or consignee will silently purchase transportation to his best advantage and needs."

**New Officers**—A. A. Burkhardt, superintendent of stations and motor service, New York Central, was elected chairman of the section, succeeding J. R. Formby, assistant to vice-president, Southern. The new vice-chairman is P. M. Chaimov, manager, freight protection, merchandise and station service, Southern Pacific.

Elsewhere in their meeting, the



FIRST OF TEN new gallery-type suburban coaches for the Southern Pacific is photographed, prior to delivery, at the Chicago plant of the Pullman-Standard Car Manufacturing Company. The SP ordered the cars for its San Francisco "commute" service after borrowing a similar car

from the Burlington and allowing commuters to sample it in actual service. Certain modifications suggested by SP commuters have been incorporated in the 10 cars ordered by the SP. After the test, the Burlington coach was returned to its regular Chicago-Aurora run.

agents approved a motion recommending to railroad management that, as a matter of customer relations, efforts be made to eliminate the Ex Parte 175 surcharge of 15% by incorporating it into the basic rate.

### B&O Extends Its Piggyback

The Baltimore & Ohio has extended its trailer-on-flat-car service to Louisville, Ky., which includes Jeffersonville, Ind., and New Albany. T-O-F-C service is now provided between that area and Philadelphia, Baltimore, Washington, D.C., Pittsburgh, Cincinnati and St. Louis.

### Car Situation Amounts To "General Shortage"

"There is a general shortage of freight cars in this country," Interstate Commerce Commissioner Anthony F. Arpaia said in a recent address.

The commissioner spoke at Eugene, Ore., at a meeting of interested parties, called by the Oregon Public Utilities Commission to discuss the car situation. He assured his audience that the ICC, through Commissioner Owen Clarke and Director C. W. Taylor, Jr., of the Bureau of Safety and Service, "have been constantly conferring with the railroads and have received commitments" that repair programs will be stepped up to return bad-order cars to service.

**Conferences with AAR**—Commissioner Arpaia also said that "more important for the future is the fact that Commissioner Clarke has been in consultation with the board of directors of the Association of American Railroads on the subject of the total adequacy of the freight car fleet." One result of such consultations, Mr. Arpaia added, was the calling of last week's Chicago meeting of AAR member roads for the purpose of considering plans for "increasing the freight-car fleet and improving its utilization."

On the matter of utilization, Commissioner Arpaia said "some shippers, through their desire to meet their own requirements, . . . have practiced wasteful transportation." He added:

"In the time of a national shortage of this kind, shippers should forbear from using cars as temporary warehousing media which results from taking advantage of circuitous routing and slow schedules. Furthermore, certain shippers get more than their quota of cars by abuse of the partial loading and unloading rules."

"Another factor contributing to the shortage of box car equipment is the inadequate storage and handling facilities for grain. Box cars are being held and used for temporary storage. . . .

"Wasteful practices are never to be condoned, but, particularly at this time, all of us should direct our efforts to elimination of any carrier or shipper practices which in any way reduce the total efficiency of our transportation system."

## Safety

# 1954 One of Best RR Safety Years

Safety Section, meeting in Buffalo, hears Statistics Committee report last year was best for employee safety

One of the best all-around railroad safety records in history was established in 1954, the Safety Section of the Association of American Railroads was told at its June 7-9 annual meeting in Buffalo N.Y.

J. T. Williams, manager of safety for the Pennsylvania, and chairman of the section's Committee on Statistics, reported to the meeting that casualties as a whole were reduced last year by 12.8%. In passenger service, he said, railroads had a fatality rate of .07 per 100,000,000 passenger-miles, equaling the industry's second best all-time record. Mr. Williams pointed out that of the 21 passenger fatalities in 1954, only five involved passengers in train accidents. The others resulted from such causes as boarding and alighting or jumping and falling from moving trains.

As far as employee safety was concerned, he went on, 1954 was the best

year in railroad history. Employee fatalities in 1954 dropped 32% under 1953, giving railroads a safety record of .08 per million man-hours, compared with .11 in 1953. Highway grade crossing fatalities last year, Mr. Williams said, decreased more than 12%, compared with 1953, while fatalities among trespassers dropped nearly 16%.

**New Era**—Perry M. Shoemaker, president of the Lackawanna, addressing the section's annual luncheon on June 8, said "the railroad industry is on the threshold of a new era of opportunity," provided the basic recommendations of President Eisenhower's Advisory Committee on Transport Policy and Organization are enacted into law by Congress.

Mr. Shoemaker said the report cannot be fairly characterized as a railroad rather than a transportation report. "As a matter of fact and frankness it fails to cover many things," he



**DIVIDEND CHECKS** — 90,000 of them for that many Chesapeake & Ohio stockholders for 1955's second quarter—were turned out in less than 12 hours by Remington Rand's high-speed electronic digital computer, the "Univac," and an auxiliary high-speed printer. It was the first time, according to John E. Kusiak, C&O vice-president—finance, that any corporation has used an "electronic brain" to prepare its dividend payments. It was possible, he said, "to simplify the check printing and mailing operation [by] furnishing the computer with

weekly information on status of stock transfer transactions, stock holdings and stockholder lists"—information which was "retained" in the computer. The C&O has leased a "Univac" to be installed in its Cleveland headquarters later this year; the machine used for the current dividend checks was a Remington Rand unit in New York. Here, examining the resulting checks, are T. Howard Keelor, C&O secretary and assistant treasurer (left), and John E. Parker, Remington Rand vice-president for electronic computer sales.

continued, "such as user charges to provide for the user of any transportation paying its real cost including any direct or indirect subsidy, freedom to merge or integrate the best in two or more modes of transportation and tighter control of parcel post shipments, all of which would have met the test of public interest and would have been particularly important to the railroad industry."

**Officers Elected**—R. C. Sabens, superintendent of safety for the Nickel Plate, was elected chairman of the section, to succeed J. R. Thexton, superintendent of safety for the Lackawanna. R. S. James, superintendent of safety and fire prevention for the Denver & Rio Grande Western, was elected vice-chairman.

Elected to the Committee of Direction, governing body of the section, were C. T. DeWitt, superintendent of safety and fire prevention for the Northern Pacific, and D. P. Russell, supervisor of the safety, loss and damage prevention bureau of the Canadian Pacific. Re-elected to the committee were D. E. Mumford, manager of safety, New York Central, and J. F. Toohey, director of safety and training for the New Haven.

## People in the News

### Edgar Takes Bank Post

Robert M. Edgar, who was a vice-president of the Boston & Maine prior to the recent change in the company's management (*Railway Age*, April 25, page 16), will join the Middlesex County National Bank, of Everett, Mass., as a vice-president, effective July 1.

### Honorary Degree for Kusik

John E. Kusik, vice-president—finance, of the Chesapeake & Ohio, has been awarded the honorary degree of doctor of engineering by Case Institute of Technology. The degree was awarded for Mr. Kusik's "determination to improve financial and operating controls in the railroad industry" and his "interest in and support of the new and exciting area of management activity known as Operations Research."

### Leverett Edwards Named Mediation Board Chairman

Leverett Edwards has been elected chairman of the National Mediation Board for a one-year term beginning July 1. He succeeds Francis A. O'Neill, Jr., who has held the chairmanship the last two years and now continues as a member of the board. Mr. Edwards has been a member of the NMB

since 1950, having been reappointed twice. His present term expires February 1, 1958.

### Cross Succeeds Mitchell As ICC Chairman July 1

Commissioner Hugh W. Cross has been elected chairman of the Interstate Commerce Commission for one year beginning July 1. He succeeds Richard F. Mitchell, who continues as a member of the commission.

## RAILROADING IN 1975

Two decades from now, railroads will still be the "work horse" of American freight transportation, in the opinion of Robert S. Macfarlane, president of the Northern Pacific.

Mr. Macfarlane was one of 15 leaders in various fields of industry who were asked by the Prudential Insurance Company to forecast what their businesses will be like in 1975. Their predictions were placed in a "time capsule" sealed in a replica of the Rock of Gibraltar in the lobby of Prudential's new north central home office building, dedicated in Minneapolis June 21. The NP president prophesied as follows:

**"Motive Power**—Atomic power for locomotives should be possible by 1975, if costs can be made competitive. In any event, future motive power will be far more efficient. Intensive railroad research assures that.

**"Freight Equipment**—Roller bearings will have replaced friction bearings on most freight cars. . . . Many specialized types of cars . . . will be in general use.

**"Passenger Equipment**—Present conventional lightweight cars will give way to lighter and less costly designs, reducing operating costs and making possible much faster schedules.

**Traffic Trends**—Railroads will still enjoy a substantial amount of passenger business. . . . They will continue to be the 'work horse' in freight transportation because . . . the economy will be geared more than ever to mass production—and railroads afford the only means of inexpensive mass transportation.

**"Consolidation and Integration**—Necessity for greater economy and increased efficiency points to likelihood of rather extensive consolidation of transportation companies by 1975. This could mean creation of integrated transportation companies providing all types of common carrier service—an enterprise which would be in the public interest, but which cannot be accomplished without major and basic changes in restrictive federal statutes. However, further coordination and unification of various services, particularly rail and highway, are inevitable."

Mr. Cross, former lieutenant-governor of Illinois, was appointed to the commission as a Republican in 1949, filling the unexpired term of the late George M. Barnard. Mr. Cross was reappointed in 1950 for a term expiring December 31, 1957. He will be 59 on August 24.

## Figures of the Week

### Freight Car Loadings

Loadings of revenue freight in the week ended June 18 totaled 785,425 cars, the Association of American Railroads announced on June 23. This was a decrease of 1,282 cars, or .2%, compared with the previous week; an increase of 78,188 cars, or 11.1%, compared with the corresponding week last year; and a decrease of 27,153 cars, or 3.3%, compared with the equivalent 1953 week.

Loadings of revenue freight for the week ended June 11 totaled 786,707 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS For the week ended Saturday, June 11			
District	1955	1954	1953
Eastern .....	128,286	111,023	134,907
Allegheny .....	153,061	127,251	162,443
Poconchos .....	60,931	50,954	58,271
Southern .....	123,260	116,221	124,280
Northwestern ..	130,466	116,867	130,289
Central Western ..	129,746	117,275	125,384
Southwestern ..	60,937	57,991	61,678
Total Western Districts .....	321,169	292,134	317,351
Total All Roads	786,707	697,583	797,252
Commodities:			
Grain and grain products .....	52,040	53,909	53,432
Livestock .....	6,347	5,933	7,441
Coal .....	135,068	110,813	131,778
Coke .....	11,670	7,333	13,990
Forest Products ..	46,434	43,080	46,182
Ore .....	84,429	71,484	93,255
Merchandise l.c.l.	67,327	60,374	66,533
Miscellaneous ..	383,392	344,657	384,641
June 11 .....	786,707	697,583	797,252
June 4 .....	713,673	612,314	775,489
May 28 .....	790,176	689,292	786,755
May 21 .....	774,419	681,967	769,618
May 14 .....	757,333	677,540	779,805
Cumulative total, 23 weeks .....	15,717,082	14,462,870	16,732,747

**In Canada.**—Carloadings for the 10-day period ended May 31 and the seven-day period ended June 7 totaled 107,750 cars and 84,960 cars, respectively, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
May 31, 1955	107,750	45,501
May 31, 1954	84,684	38,987
June 7, 1955	84,960	30,495
June 7, 1954	72,857	26,563
Cumulative Totals		
June 7, 1955	1,601,699	704,781
June 7, 1954	1,492,322	639,790

### April Accidents

The Interstate Commerce Commission has issued its Bureau of Transport Economics and Statistics' preliminary summary of railroad accidents for



## Actual and Estimated Gross Capital Expenditures of Class I Railways

Period	Number of roads	Road	Equipment	Total	Per cent of total	
		Thousands	Thousands	Thousands	Road	Equipment
Actual 1954:						
1st quarter .....	125	\$ 72,229	\$167,379	\$239,608	30.1	69.9
Year .....	125	320,353	497,079	817,442	39.2	60.8
Actual 1955:						
1st quarter .....	125	54,112	119,302	173,414	31.2	68.8
Estimated 1955:						
2nd quarter .....	1 123	78,199	144,386	222,585	33.1	66.9
3rd quarter .....	1 123	94,866	104,627	199,493	47.6	52.4
4th quarter .....	1 123	85,252	70,624	155,876	54.7	45.3
Total:						
Year 1955, actual and estimated .....	—	312,429	438,939	751,368	41.6	58.4
Per cent of increase:						
1st quarter 1955 vs. 1954 .....	—	d 25.1	d 28.7	d 27.6	—	—
Year 1955 vs. 1954, ac- tual and estimated ..	—	d 2.5	d 11.7	d 8.1	—	—

1 Estimate not furnished by five roads.

d Decrease.

— From the June 1955 issue of "Transport Economics," published by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

April and the first four months of 1955. The compilation, which is subject to revision, follows:

Item	Month of April 1955	4 months ended April 1955	1954	1955
Number of train accidents*	604	580	2,599	2,508
Number of accidents resulting in casualties	24	44	138	172
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	58	76	193	209
Injured	71	76	207	240
Passengers on trains:				
(a) In train accidents*				
Killed	—	—	—	—
Injured	33	39	160	67
(b) In train-service accidents				
Killed	—	—	2	2
Injured	139	157	548	563
Travelers not on trains:				
Killed	2	—	5	2
Injured	60	63	324	286
Employees on duty:				
Killed	13	14	77	70
Injured	1,352	1,215	5,383	5,196
All other nontrespassers:**				
Killed	88	84	473	465
Injured	361	375	1,873	1,775
Total—All classes of persons:				
Killed	166	174	750	748
Injured	2,016	1,925	8,495	8,127

\* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of \$350 or more to railway property in 1954. Beginning January 1, 1955, this minimum was raised to \$375. Only a minor part of the total accidents result in casualties to persons, as noted above.

\*\*Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrespassers, were as follows:

Persons:				
Killed	85	69	443	441
Injured	224	229	1,327	1,234

## Traffic

### '54's 4th-Quarter Loadings Underestimated by 3.4%

The Regional Shippers Advisory Boards underestimated car loadings of last year's fourth quarter by 3.4%.

This was shown by the latest comparison of forecasts with actual loadings, issued by Chairman A. H. Gass

of the AAR's Car Service Division.

Seven of the 13 boards submitted underestimates which ranged from 0.5% for the Atlantic States board to 19.7% for the Ohio Valley board. Overestimates submitted by five boards ranged from 0.7% for the Pacific Coast board to 9.8% for the New England board. The Southeast board predicted accurately the total loadings of its territory.

By commodities, there were 18 underestimates, ranging from 0.2% on sugar syrup and molasses to 12.7% on vehicle parts; and 14 overestimates, ranging from 0.6% on petroleum and petroleum products to 27.1% on cotton seed, soybean-vegetable cake and meal, excluding oil.



"OBSTACLE COURSE" shown here is General Electric Company's riding-quality test track, on a spur of the East Erie Commercial. The track permits the GE locomotive and car equipment department to study locomotive reaction to abnormal track conditions. One set of rails 819 ft long simulates staggered low rail joints with a dif-

## Law & Regulation

### ICC Inspection Rules For Self-Propelled Cars

The Interstate Commerce Commission has set back to September 1 the effective date of the rules it has prescribed for inspection of multiple-unit equipment, i.e., electrically propelled cars operated by a single set of controls. The postponement was from July 1.

### AAR's Breithaupt Endorses Cabinet Report

Harry J. Breithaupt, Jr., assistant general solicitor, Association of American Railroads, told the Society of Business Magazine Editors at Washington June 3 that the Cabinet Transport report is "by no means simply a railroad report."

He emphasized that its basic proposals (*Railway Age*, April 25, page 49) would permit "greater reliance on competitive forces in transportation pricing" to insure a modern and financially sound common carrier system.

He said the report would modernize the National Transportation Policy to preclude its use to justify "artificial and arbitrary allocation of traffic." The Interstate Commerce Commission, he asserted, has diverted traffic to other transportation modes by requiring railroads to maintain some rates higher than railroads think they ought

ference of 3/4 in. between high and low points. A second section has a 1 1/2-in. difference, and the third set has a 3/4-in. lateral wave in rail length for 819 ft, followed, after a space of 936 ft of straight level track, by the last section, where the lateral wave amplitude of the track is increased to 1 1/2 in.



to be. The one question, he said, to be considered in judging a proposed rate is whether the rate is compensatory.

He went on to endorse the report's recommendation that the commission be limited to determination of reasonable minimum and maximum rates. Another proposal which the AAR spokesman singled out for mention was the suggested change in ICC suspension powers, with suspension to be imposed only as a special and unusual remedy.

Mr. Breithaupt went on to say that the implementation of the report will aid railroads "immeasurably," but noted that no freedoms are proposed for railroads that are not enjoyed by their competitors.

Mr. Breithaupt was one of three speakers at the SBME meeting, each representing a different field of transportation. Peter T. Beardsley, director, law department, American Trucking Associations, said his organization is "unalterably opposed" to the Cabinet report, stating that its "major premises are basically incorrect." Dr. Miles E. Robinson, director, division of air transport economics, Air Transport Association, said his industry is still studying the report and will wait to see its effect on air transportation.

### Freas Urges "Equal Opportunity" in Transport

"Equal opportunity" in transportation was urged by Interstate Commerce Commissioner Howard Freas, in addressing the Pacific Coast Shippers Advisory Board at Los Angeles, June 10. Explaining that it is the function of government to be an impartial umpire seeking to assure stable, dependable service, and to protect rights of legitimate carriers, the commissioner said, "This does not mean that regulators should undertake to assume normal functions of management."

Regulation for equal opportunity in transportation is far from easy, and is not attained by dividing traffic proportionately among available carriers, according to Commissioner Freas, who said this would disregard inherent advantages and relative efficiencies; and who added:

"The carrier whose operations are best suited to shippers' needs and are carried on most economically is entitled to all the business the shipper is willing to give him. I do not conceive it to be a function of regulation, by artificial restraints, to make such a carrier share available business with another whose services are not adequate and whose methods are not efficient."

To avoid wasteful economic strife in transportation, the commissioner advocated coordinated effort in this field, brought about by: (1) "Better understanding of basic facts regarding costs and service values; (2) sincere willingness on the part of carriers, shippers and regulatory agencies to cooperate; and (3) a suitable rate structure which

properly reflects advantages and disadvantages of service offered."

Common carriage is the "hard core" of the nation's transportation, and is indispensable to its economy, but cannot function effectively while getting, as at present, a small proportion of the traffic available. "It is estimated that about a third of the nation's domestic commerce is being transported by carriers who are not subject to the commission's economic regulations. Probably half of this amount is being transported in private equipment. We cannot expect common carriers to provide adequate service at low rates if they are left primarily with that which no one else wants."

Commissioner Freas referred to the natural impatience with laws enacted to meet conditions which no longer exist and urged a positive program of improved regulation where needed. At the same time, he warned against excessive zeal or haste in condemning provisions of law which past experience has shown to be beneficial to carriers, shippers and the public generally.

**Car Supply Goal**—Calling attention to increased industrial activity, to the excess of freight cars retired over new cars installed, and to deferred maintenance (represented in 6½% of cars owned awaiting repairs), the board resolved to "call to the attention of all roads, through the AAR, our concern over present car supply and car repair programs and request that speedy action be taken to bring the car supply up to a figure of at least 1,850,000 cars and that percentage of cars awaiting repairs be reduced to a figure not exceeding 3% of total ownership."

In connection with the clean car program, it was decided to attempt to develop for the September meeting in San Francisco a definition of "dirty car"; and to present this definition to the National Association of Shippers Advisory Boards at its annual meeting with a request that such a uniform description be adopted on a national basis.

### ATOMIC ENERGY EXPERT TO HEAD GM RESEARCH

The appointment of Dr. Lawrence R. Hafstad, physicist and authority on atomic energy, as director of General Motors Corporation's research division at Detroit, was announced last week. The appointment will be effective later this year.

Dr. Hafstad has been director of the atomic energy division of the Chase-Manhattan Bank in New York, since January 1, 1955, and for four years before that he headed the Atomic Energy Commission's reactor development division. He is credited with being one of the world's foremost authorities on harnessing the atom for industrial power.

### Bills in Congress

Representative Prouty, Republican of Vermont, has introduced House Joint Resolution 343, to authorize and request the President to take "such action as may be appropriate" to have the United States-Canada International Joint Commission "make a survey to determine the economic feasibility and the cost of constructing a waterway which would connect the Hudson river with the St. Lawrence river, via Lake Champlain."

Representative Bentley, Republican of Michigan, has introduced H.R. 6833, to amend the Railroad Retirement and Social Security acts to eliminate provisions which restrict the right of a spouse or survivor to receive benefits simultaneously under both acts.

Representative Harden, Republican of Indiana, has introduced H.R. 6838, to liberalize benefit provisions of the Railroad Retirement Act.

Representative Rogers, Democrat of Florida, has introduced H.R. 6843, to increase, from 35 cents to 76 cents, the amounts which are exempt from the tax on amounts paid for the transportation of persons.

Representative Priest, Democrat of Tennessee, has introduced, "by request," H.R. 6873, to amend the Interstate Commerce Act with respect to the authority of the Interstate Commerce Commission to regulate the leasing of motor vehicles by motor carriers.

### NIT League Becomes Party to Per Diem Case

The Interstate Commerce Commission has authorized the National Industrial Traffic League to intervene in the case wherein a group of short-line railroads is assailing per-diem provisions of Section 5a Agreement No. 7, which also covers procedures for the fixing of other car rentals, demurrage and storage.

The proceeding is docketed as No. 31774, and the complaining roads are asking the commission to require changes in procedures for fixing the per diem rate, or withdraw its approval of the agreement (*Railway Age*, April 18, page 9). There is also pending before the commission another per diem case (No. 31358) which involves a complaint filed by large roads against lines which refused to pay the present per diem charge of \$2.40.

NITL's petition for the leave which it got to intervene in No. 31774 took no position in the controversy, but the League wanted to be in a position to protect the interest of its members as they might appear. The League's position has been that the assailed agreement is "satisfactory."

The commission also authorized the New York, Susquehanna & Western to intervene in No. 31774. That road's petition, stating that it would support the complaint, was signed also by the New Haven and Boston & Maine, which

are among the named defendants in the case.

The NH and B&M are also defendants in No. 31358, as is the Susquehanna. That case has reached the proposed-report stage, Examiner Howard Hosmer having recommended that the commission pave the way for ending the dispute by issuing a declaratory order stipulating that the per diem rate would be on a reasonable basis if it were cut from \$2.40 to \$2.10. (*Railway Age*, December 13, 1954, page 7.)

### "THE RIGHT TO WORK"

"Labor leaders . . . have gone the full circuit. . . . Where once they championed the freedom of the individual, they now clamor for the right to force and coerce him into union membership. Compulsory union membership is a device they employ to acquire more power over their own union members as well as over the employer. It is one of the principal symptoms of the emergence of the union as a separate institution with interests and policies different from and sometimes hostile to those of its members.

"Public opinion polls indicate that a sizable majority of people . . . disapprove compulsory union membership and favor state right-to-work laws . . . These trends reflect a growing awareness . . . of the threat to our free way of life inherent in compelling a man to join a private organization before he can hold any sort of a job in industry. . . .

"The right to work is co-extensive with the right of life itself. . . . Just as the right may not be entirely denied so it may not be made to depend upon compliance with an arbitrary condition, such as membership in a private organization. . . .

"Some workingmen and women want to join a union. Others do not. In either event their choice should be respected. . . . A union, after all, is seldom merely a collective bargaining representative. It is always partly that but it is often also partly a political organization, partly a fraternal order, partly a social club, and partly an insurance concern. Even more often it aspires to be a state within a state and to exercise discipline and control over its members. This is all very well where membership is on a voluntary basis, but it violates fundamental American principles when a man is forced into an organization against his will. . . .

"Freedom of association embraces both the right to join and the right not to join. . . . All freedoms rest on choice, and where choice is denied freedom is destroyed as well. . . ."

—From an address to the National Industrial Conference Board by J. C. Gibson, vice-president and general counsel, Santa Fe.

### State Commissioners Name Panel for Ex Parte 175

The National Association of Railroad & Utilities Commissioners has appointed a panel of three state commissioners to sit with the Interstate Commerce Commission in the Ex Parte 175 case.

The IOC is now receiving evidence and has scheduled hearings on the railroads' petition for authority to make permanent the Ex Parte 175 increases, which are now scheduled to expire December 31 (*Railway Age*, June 20, page 9).

The panel of state commissioners consists of: Albert P. Bruch of the Wyoming Public Service Commission; Cayce L. Pentecost of the Tennessee Public Service Commission; and Wendell Tennis of the Indiana Public Service Commission.

### Competitive Transport

#### Intercity Truckers Say Tonnage Up Over 1954

Common and contract carrier trucks carried 60.4 million tons of interstate freight in the first quarter of 1955, a 12.2% increase over the same period last year, the American Trucking Associations' Research department has reported.

It was the second successive quarter in which increases were recorded, the ATA said, the last quarter of 1954 having halted a downward trend.

Common carrier trucks, which accounted for 86.8% of the total tonnage reported, showed a first quarter increase of 12.6%. Contract carriers had a 9.2% tonnage rise. The ATA noted the greatest rise—16.2%—in the Central region, with all regions showing increases of 9.4% or more.

### Pan Atlantic Proposes Sea-going Piggyback

The Pan Atlantic Steamship Company—a subsidiary of the Malcom P. McLean trucking interests—has filed plans with the Maritime Administration in connection with a sea-going piggyback service.

Pan Atlantic offered to "trade in" seven obsolete cargo ships to the government and to use funds obtained to construct seven new type roll-on, roll-off cargo vessels. With the new ships, expected to cost \$9 million each, the Pan Atlantic-McLean combine proposes to offer door-to-door water freight service between East and Gulf coast ports. The new ships would be able to transport 268 20-ton trailers and 20 35-ton trailers, the Maritime Administration reported.

Pan Atlantic was bought from the Waterman Steamship Lines several

months ago by McLean Securities Corporation, an organization headed by Malcom P. McLean, former head of the McLean Trucking Company. As reported in *Railway Age*, June 6, page 10, the Interstate Commerce Commission has launched an investigation of the entry by McLean into ocean shipping through his acquisition of Pan Atlantic and, subsequently, the Waterman line itself.

### Equipment & Supplies

#### World Bank Lends Funds For South American Road

The World Bank has granted a \$15.9 million loan to the Colombian National Railroads to help finance an extension of the Magdalena Valley Railroad, now being built in Colombia, South America, with the aid of a prior \$25 million World Bank loan.

The loan is to pay for imported equipment and services required for a 190-mile extension of the line from Gamarra to Fundacion; purchase of rolling stock; improvements on an existing line from Fundacion to Santa Marta; construction of terminal facilities at Santa Marta and Cienaga; and installation of ferry slips and purchase of a ferry and tractor-trailer units to be used in conjunction with a highway-ferry connection.

The Bank of America National Trust and Savings Association is participating in the loan, without World Bank guarantee, to the extent of \$866,000. The loan is for 25 years at 4¾% interest with amortization to begin November 1, 1958.

The Magdalena Valley was originally planned to run only from Puerto Salgar to Gamarra, 235 miles. This portion of the line is reported 40% completed. Completion goal for the whole line is early 1958.

### FREIGHT CARS

#### 4,083 New Freight Cars Delivered in May

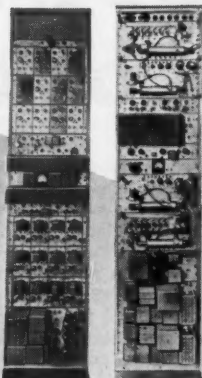
New freight cars delivered in May for domestic use totaled 4,083, compared with 2,750 in April and 3,173 in May 1954, the American Railway Car Institute and the Association of American Railroads have announced jointly.

Orders for 3,041 new freight cars were placed in May, the announcement added, compared with 2,706 in April and 1,071 in May 1954. Orders in May—the second successive month in which freight-car orders increased—included 2,168 cars ordered from contract builders and 873 from company shops.

The backlog of cars on order and undelivered on June 1 was 16,886,

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# AIR COSTS MONEY!

## Stop leakage with new

## WABCOSEAL® Angle Cocks

**B**RAKE pipe leakage increases compressor operation, lowers its efficiency and causes difficult train handling. Reduce leakage to the minimum by installing the *new* Wabco Seal Angle Cock shown here. Two styles are available—with or without spring-locking handle.

Heart of the new Wabco Seal Angle Cocks is the sealed key that stays tight through a wide degree of key wear. A Wabco compression ring replaces the standard tapped thread at the brake pipe end to give a positive seal. Also, adequate end tolerance is provided so brake pipe nipple need not be cut to precise length.

The passenger car and locomotive angle cock has a spring loaded handle that snaps the socket into locked position when handle is fully open or closed and keeps it there despite vibration and shock.

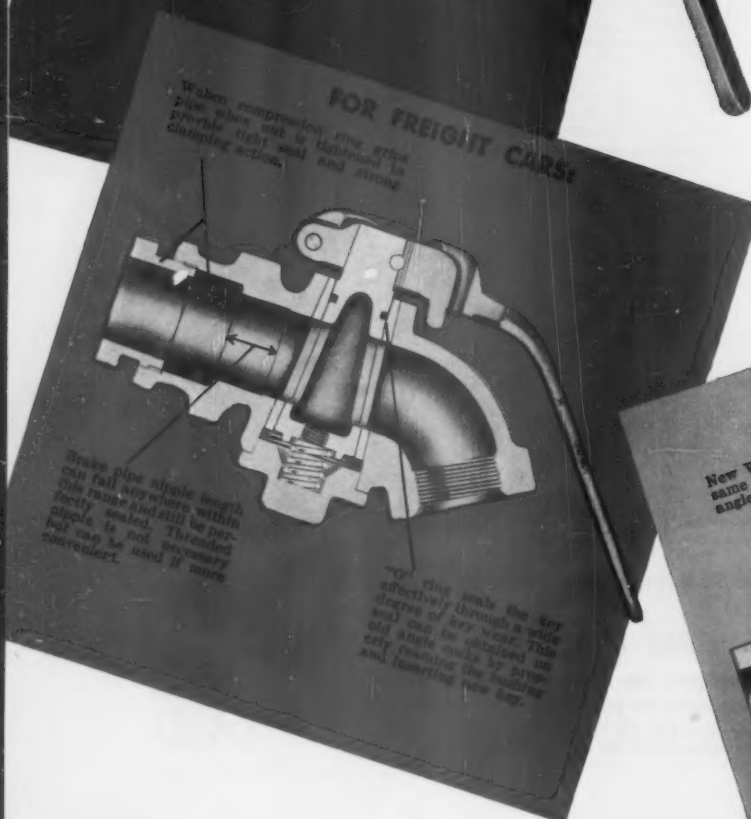
The sealed key and spring locking handle are available separately for application to present angle cocks.

## Westinghouse Air Brake COMPANY

AIR BRAKE DIVISION



WILMERDING, PA.





compared with 17,930 on May 1 and 15,615 on June 1, 1954. A breakdown by types of cars ordered and delivered in May, and of cars on order June 1, appears in the following table:

Type	Ordered May '55	Delivered May '55	On Order June 1, '55
Box-Plain .....	1,675	2,212	8,788
Box-Auto .....	0	0	200
Flat .....	20	62	974
Gondola .....	4	297	1,181
Hopper .....	0	262	527
Covered Hopper .....	910	365	1,463
Refrigerator .....	100	544	592
Stock .....	0	0	300
Tank .....	270	298	2,205
Caboose .....	52	20	187
Other .....	10	23	469
<b>TOTAL .....</b>	<b>3,041</b>	<b>4,083</b>	<b>16,886</b>
Car Builders .....	2,168	2,438	7,294
Company Shops .....	873	1,645	9,592

## Pakistan RR Wants 59 Freight Cars

The Director General of Railways, Karachi, Pakistan, is inviting bids for supply of 59 broad-gage freight cars, according to Foreign Commerce Weekly. The cars, to be supplied dismantled, are for the North Western Railway. A copy of the tender notice and specifications may be borrowed from the Commercial Intelligence Division, Bureau of Foreign Commerce, Washington 25, D.C.

The **Toronto, Hamilton & Buffalo** has ordered 20 70-ton covered hopper cars from the National Steel Car Corporation for delivery next December.

The **Western Fruit Express Company** has ordered 100 70-ton bunkerless refrigerator cars from the Pacific Car & Foundry Co.

## LOCOMOTIVES

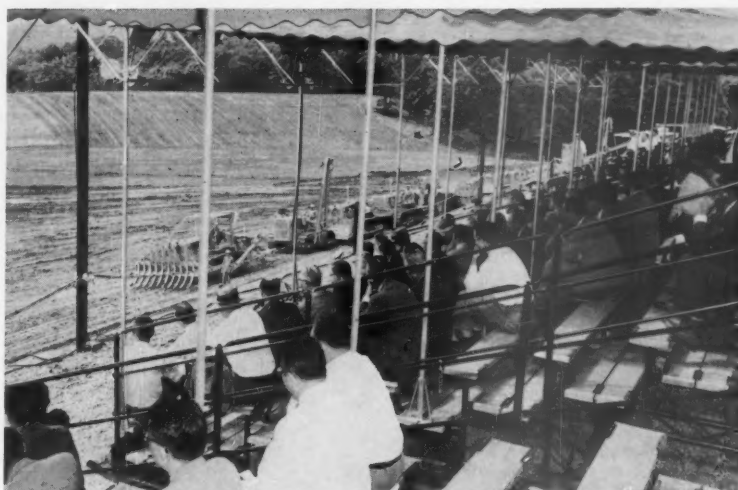
### Class I Roads Install 516 Locomotives in 5 Months

Class I railroads installed 516 new locomotive units during the first five months of 1955, the Association of American Railroads has announced. Included were 509 diesel-electric and seven electric units. In the same 1954 period, Class I roads installed 688 new locomotive units, which included 684 diesel-electric units and four gas turbine-electric locomotives.

New locomotive units installed in May 1955 by Class I railroads totaled 103, including 101 diesel-electric and two electric units, compared with April installations of 105 diesel-electric and two electric units, and May 1954 installations of 130 units.

New locomotives on order by Class I railroads on June 1 totaled 385, of which 382 were diesel-electric and three were electric, compared with 170 new units on order June 1, 1954, which included 149 diesel-electrics, 11 gas turbine-electrics and 10 electric.

The **Lake Superior & Ishpeming** has ordered one 1,600-hp diesel unit



**GRADING EQUIPMENT** manufactured by Caterpillar Tractor Company was put through its paces for the benefit of more than 130 press representatives on June 2 at Peoria, Ill. The demonstration, involving almost \$2 million worth of equipment, took place at the company's 800-acre proving ground. It was part of a day-long round of activities which included an

inspection of Caterpillar's diesel engine plant and addresses by company executives, including President H. S. Eberhard. What the press saw was a preview of an exhibition which Caterpillar held from June 6 to June 17 for more than 500 of its domestic and foreign distributors, auxiliary equipment manufacturers and field representatives.

from Alco Products for delivery in August at a cost of approximately \$145,000.

## Mozambique Inquiring For Diesel Locomotives

The Directorate of Services of Ports, Railways & Transports, Lourenco Marques, Mozambique, is inviting bids for supply of five 3½-ft-gage diesel-electric or diesel-hydraulic locomotives, according to Foreign Commerce Weekly. A copy of bidding conditions, in Portuguese, may be borrowed from the Commercial Intelligence Division, Bureau of Foreign Commerce, Department of Commerce, Washington 25, D.C.

The **Illinois Terminal** has ordered from the Electro-Motive Division of General Motors Corporation 12 1,200-hp diesel switchers for delivery in October at an estimated cost of \$1,400,000.

The **Norfolk Southern** has ordered two 1,600-hp all-service diesel units from the Baldwin-Lima-Hamilton Corporation at a cost of \$307,605. Delivery is expected November 1.

## PASSENGER CARS

The **Saudi Arabia Railway** has ordered one rail diesel car (RDC-1) from the Budd Company. Three Budd rail diesel cars (RDC-2's) already are in service on the road.

## SPECIAL

### NH to Lease Giant Brain, Streamline Office Methods

Directors of the New Haven have authorized leasing from International Business Machines Corporation an electronic data-processing machine to mechanize clerical and paper work. Because the IBM "705" machine cannot be delivered for two years, the road has ordered for immediate delivery "an economy-size brain" to substitute temporarily for present mechanical punched-card equipment. The road plans to have a centralized electronic machine bureau at New Haven to replace four separate mechanical installations.

The New Haven also has hired Leahy & Co., management consultants who specialize in elimination of unnecessary records, to streamline the road's office methods. A preliminary survey by Leahy indicated that for every NH office employee the road has had about 148,900 pieces of paper, compared with the general industry average of about 50,000 per employee. The streamlining will be completed in five months and will release space valued at \$44,000

... The old Railroad Fair site on Chicago's lake front will likely be the spot for a permanent exposition. The project, already endorsed by a number of civic and business groups, has received wholehearted approval from the city's convention bureau.

yearly, as well as storage equipment with replacement value exceeding \$50,000.

## Organizations

### Kiley to Address Roadmaster, B&B Meetings

John P. Kiley, president of the Milwaukee, will be among the featured speakers at the annual convention of the Roadmasters' and American Railway Bridge & Building Associations in Chicago, September 19-21.

As in the past, the two conventions will be held separately, but there will be two joint programs which will include Mr. Kiley's talk and other features of mutual interest. The two groups also will join in an inspection trip of the Gary (Ind.) rail mill of the United States Steel Corporation.

Both conventions will be held in the Conrad Hilton Hotel.

have been appointed vice-presidents, sales, at Chicago and St. Louis respectively.

William A. Baldwin has been appointed sales manager for Nailable Steel Flooring and other transportation products of **Stran-Steel Corporation**, at Detroit. Production and marketing of the steel flooring for railway freight cars, developed by **Great Lakes Steel Corporation**, will be



William A. Baldwin

## Supply Trade

Rudolph Furrer, vice-president of **ACF Industries, Inc.**, has been placed in charge of manufacturing and engineering for the parent company and has been named president of the Nuclear Energy Products division. **John E. Angst**, district sales manager of American Car & Foundry division, and **Ellsworth B. Carpenter**, western sales manager of that division,

assumed by Stran-Steel July 1, when its status as a division of Great Lakes Steel will be changed to that of a separate corporate unit of **National Steel Corporation**, of which Great Lakes also is a unit. Mr. Baldwin has been a Nailable Steel Flooring district sales representative, at Chicago.

**Frank F. Elliott**, senior vice-president of sales for **Crane Company**, has been elected president and chief executive officer.

## New Facilities

### Reading Wins Right To Build New Line

Judge Thomas J. Clary, of the U.S. District Court at Philadelphia, has denied an injunction sought by the Pennsylvania to restrain the Reading from building a spur line to serve a new electric generating plant of the Philadelphia Electric Company at Cromby, Pa. The Reading's proposed line, which will serve no other industries, will connect its main line with the electric company's own tracks, via a bridge to be built across the Schuylkill river.

In defending the suit, the Reading asserted that the new PE plant lies "almost midway" between Reading and PRR lines; that it will consume approximately 900,000 tons of coal per year; and that its connection with both railroads is necessary to insure adequate service. The Reading further stated that its proposed spur was undertaken at PE's request, and that Interstate Commerce Commission approval was not needed, since the line "does not constitute an extension into new territory."

## Financial

**Canadian National.—1955 Financing.**—CNR financing bills now before the Canadian Parliament provide for: (1) Refunding of maturing obligations, in an amount not to exceed \$200,000,000; and (2) current year capital expenditure. (Continued on page 54)

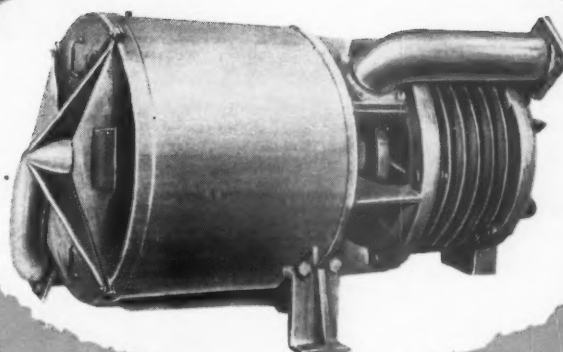


**FIRST Canadian National passenger train** crossed the new Canso causeway early this month. The causeway, three-quarters of a mile long, crosses Canso strait between Aulds Cove, N.S., and Port Hastings, on Cape Breton Island. By replacing a car ferry between Mulgrave and

Point Tupper it will reduce by an hour or more the running time of CNR trains to and from North Sydney, N.S. The causeway is built of rock blasted from Cape Porcupine mountain, which stands close to the site on the mainland shore.

# The New Seprifuge

**First full-flow  
lube oil  
cleaning unit  
for Diesel  
locomotives**



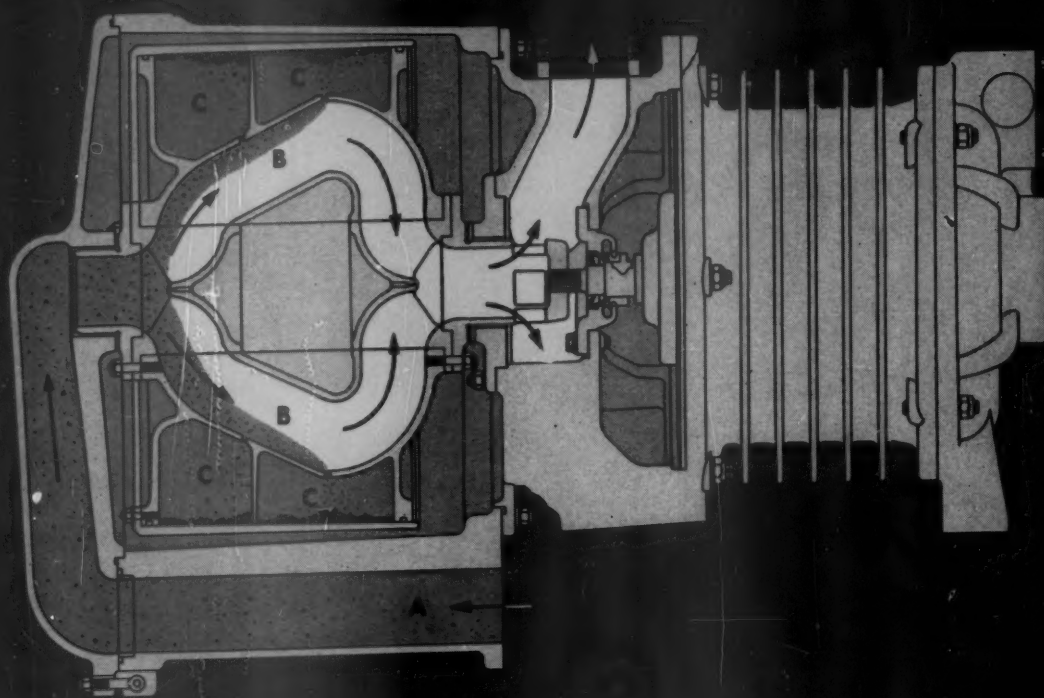
*eliminates filters*

*cleans oil better*

*lengthens engine life*

*saves money*





**Seprifuge\* . . . traps the**



**Reduces down-time formerly**





**O**IL TO BE CLEANED is pumped under pressure into the inlet of the Seprifuge (A) and is channeled into 12 components in the spinning rotor (B), which has a top speed of 3245 r.p.m. Centrifugal force separates dirt particles, heavier than oil, by forcing them to the outside of the impeller. All abrasive particles larger than the minimum oil film thickness,

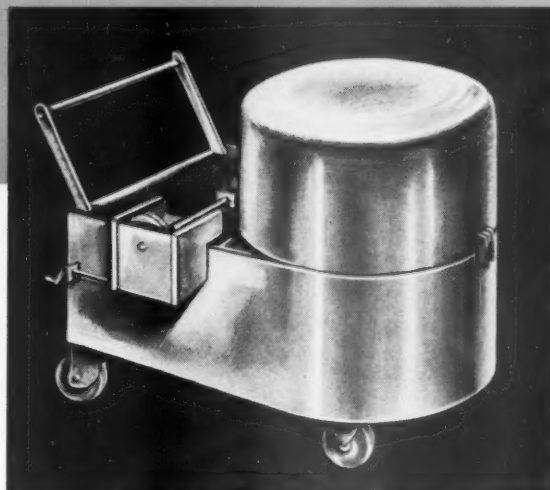
## How it works

which lubricates moving engine parts, pass through slots in the side wall into collection chambers (C).

Material removed from the oil remains at the outer wall even when machine is not running, and design of the unit prevents the dirt from returning or contacting the oil stream. When locomotive engine is at idle the Seprifuge cleans 80 gallons of oil per minute. At top speed it cleans 265 gallons per minute. *No by-passes—100% full-flow oil cleaning—does not deplete the additive content of the oil.*

### Easy to maintain—quickly cleaned

Tests on locomotive engines show that the Seprifuge has run for as much as two months without requiring cleaning, as compared with changing present-type filters on an average of every fifteen days. Cost of filter elements is saved and the disposal problem is eliminated. Cleaning of the Seprifuge can be done quickly and easily with the rotor-type spinning cleaner specially developed for the purpose.



*Electro-Motive Centrifugal-Type Impeller Cleaner*

## e dirt as it spins the oil

*Protects engine by whirling dirt and harmful abrasives, which cause engine wear, out of the lubricating oil*



*Eliminates lube oil filters—saves tremendous oil losses*

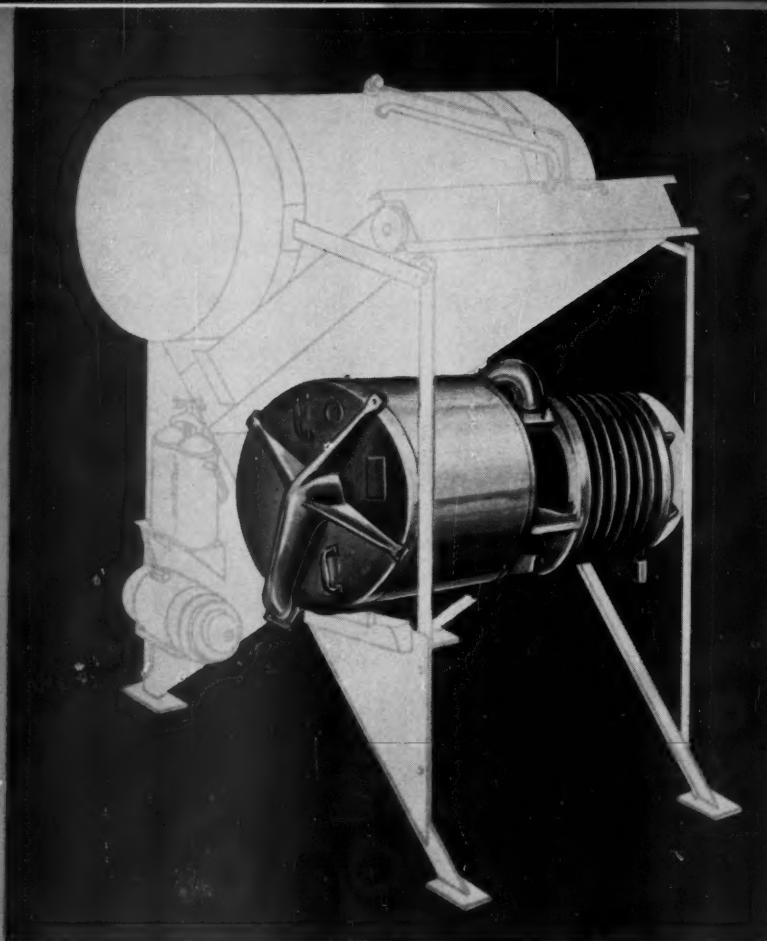
*required to change filters—cuts maintenance costs substantially †*

*Cleans 265 gallons of oil per minute at top speed—even with locomotive engine at idle, it cleans 80 gallons per minute*

†Seprifuge saves as much as \$21.12 on each filter change—a return of as much as 42% on investment.


# Seprifuge ...


now available for  
all AC-equipped  
Diesel locomotives



## Easy to install

Compact Seprifuge unit fits into present equipment rack. Complete with self-contained 5 h.p. AC electric motor, it is the same diameter as the old filter and 6" shorter. Runs on the locomotive AC system.

 Can be easily installed on all locomotives now AC equipped.

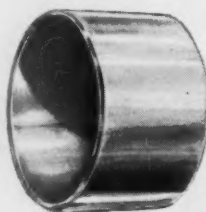
 Available as an extra on new AC-equipped GM locomotives.

## Simple design—long life, low maintenance

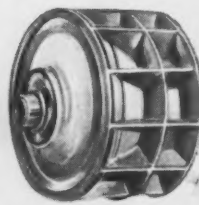
For full information,  
write us or contact  
your nearest  
Electro-Motive  
representative.



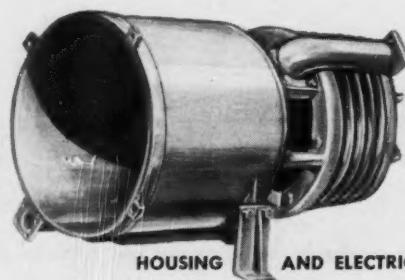
COVER



ROTOR SHELL



IMPELLER



HOUSING AND ELECTRIC MOTOR

The Seprifuge has only one moving part, the impeller. It consists of several pieces assembled together and has an inlet stubshaft and drive stubshaft both supported by oil-lubricated sleeve-type bearings.



**ELECTRO-MOTIVE DIVISION • GENERAL MOTORS**

La Grange, Illinois • Home of the Diesel Locomotive • In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario



**ALL *Positive* BRAKE BEAM PARTS ARE RENEWABLE**

AAR No. 18—Certificate No. 52

The fact that ALL parts of the Positive Brake Beam ARE RENEWABLE is ONE of the reasons that there are MORE POSITIVE BRAKE BEAMS SOLD THAN ANY OTHER KIND! There are other reasons, too . . . Design and dependability mean higher efficiency for operating men—lower cost on repairs and replacement. The real reason is: real reasoning!

**CHICAGO RAILWAY EQUIPMENT CO.**

332 SOUTH MICHIGAN AVENUE • CHICAGO 4, ILLINOIS

C-5





**PRECISION..**

**ALCO**

**ALCO PRODUCTS, INC.**

Every ALCO Renewal Part is tested before shipment. Modern, scientific methods and the finest precision equipment is employed in test and inspection procedures. Genuine ALCO parts meet strict specifications—established by specialists in railway motive power. They're backed by full warranty, too.

## ...Proves it's a Genuine ALCO Renewal Part!

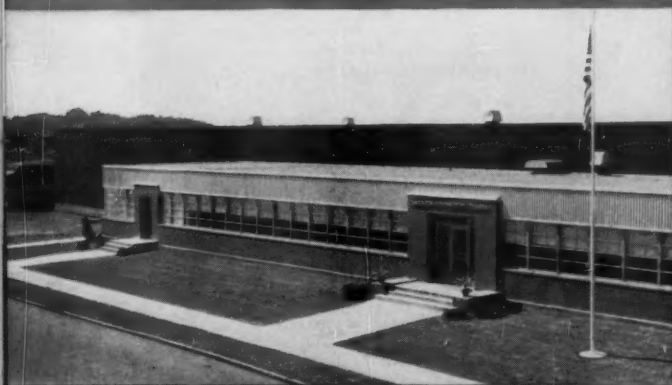
*and you get these extra benefits*

**LATEST DESIGN FEATURES** — All ALCO parts incorporate the latest features developed through extensive laboratory and field research. This means better performance and protection against failure.

**STOCK REDUCTION PLAN** — This service offered by ALCO provides for the reduction of railroad inventories by absorbing surpluses into ALCO'S world-wide supply system. Returns are credited by ALCO against part purchases.

**MULTIPLE SUPPLY FROM SINGLE SOURCE** — Market research, competitive price and other advantages of multiple buying and supply are available at *one source*. Strategic locations of ALCO warehouses insure fast delivery, low shipping costs.

*and precision ALCO Parts are always available when you need them . . .*



... IN ALCO'S NEW WAREHOUSES. This 30,000 sq ft St. Louis warehouse — one important link in a nationwide supply system — carries 5000 different parts assuring highest possible service levels to meet your needs.



... IN SCIENTIFIC AND UNIFORM PACKAGING. This pump is thoroughly protected from dirt and moisture by a layer of Vapor Corrosive Inhibitor paper and cellulose wadding in a box designed for the part.



ECONOMICAL MOTIVE POWER . . . ideal for your needs — can be yours with ALCO Diesel-Electric Locomotives. This ALCO 1600 HP Road Switcher, shown above, is representative of the complete ALCO line.

formerly **AMERICAN LOCOMOTIVE COMPANY**

Sales and  
Service Offices  
in Principal  
Cities

Piggy-Back ... That's Progress!

By Hungerford



# E Edgewater Steel Company

PITTSBURGH, PA.

*Serving America's Railroads*

with  
ROLLED STEEL TIRES  
ROLLED STEEL WHEELS  
AND DRAFT GEARS



We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a set for your company magazine, at cost.



**ASSOCIATION  
OF AMERICAN  
RAILROADS**

**Rx**

## **Prescription**

**Must be of material to specification**

**Must be cast and fitted to close tolerances**

**Must have complete interchangeability of all parts**

**Must be sold at a reasonable price**

**E**

**H**

**F**

**NATIONAL  
MALLEABLE AND STEEL  
CASTINGS COMPANY**

**CLEVELAND 6, OHIO**



## A standard coupler was needed

Small freight cars or large, small locomotives or mighty, all would be useless without some way to join them together; thus, we find the history of the present day automatic coupler most interesting. Many years have passed since the link and pin, the Miller Hook and the first coupler of Eli Janney.

So frightful were the accidents of coupling and uncoupling with the old link and pin method that in 1893 Congress passed the Safety Appliance Act, which made it mandatory that after January 1, 1898, all cars used in interstate commerce must be equipped with couplers which would couple automatically on impact, and uncouple without a man stepping between the cars.

While the federal statute saved countless limbs and lives, yet it posed for the railroads a tremendous problem, in that soon there were over 100 different types of couplers, knuckles, locks, and parts.

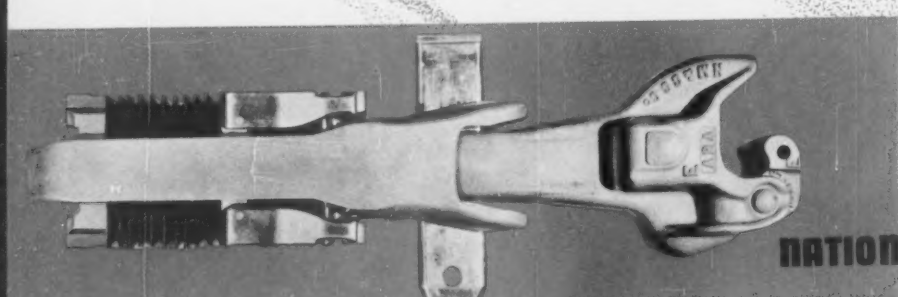
Finally, in 1916, the Type "D" Coupler was adopted as standard for railroads of the United States, Canada and Mexico. With the adoption of a standard coupler it soon became evident that a set of specifications would be necessary to control material, tolerances and so forth. In 1918, the Association of American Railroads set up the first specifications on the manufacture and inspection of couplers.

A comprehensive inspection and gauging program, to assure the railroads the highest quality couplers, is conducted by the coupler manufacturers in accordance with the A.A.R. specifications. Also, the coupler manufacturers periodically engage jointly in an extensive program consisting of complete inspection, gauging, interchange and testing of "E", "F" and "H" couplers.

These A.A.R. specifications, revised and expanded from time to time, require a total of 133 gauges for the three couplers — "E", "F" and "H" — covering 563 gauging points.

In addition to the A.A.R. coupler specifications, some railroads even go further and require magnaflexing of all couplers ordered by them.

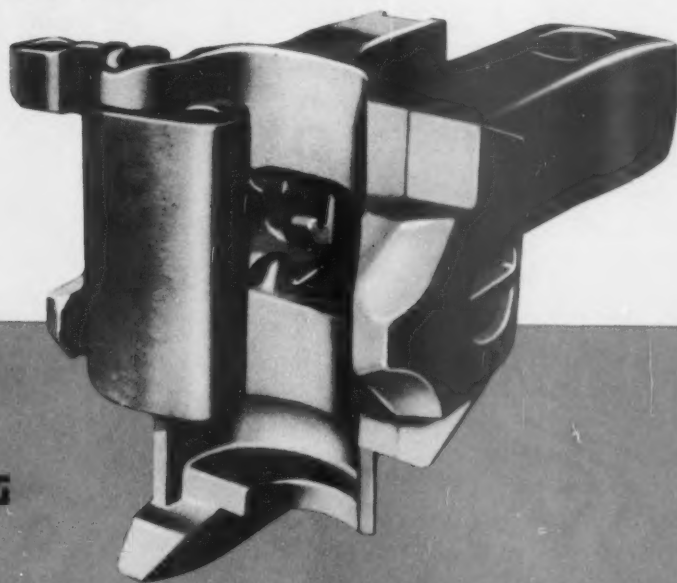
National is proud to have played, and to continue to play, an important part in the development of modern railroad couplers, and will continue to more than follow the inspection and gauging specifications set down by the Association of American Railroads.



**NATIONAL DRAW GEAR ASSEMBLY**

# 50 GAUGES

# 214 GAUGING POINTS



## TYPE "F"

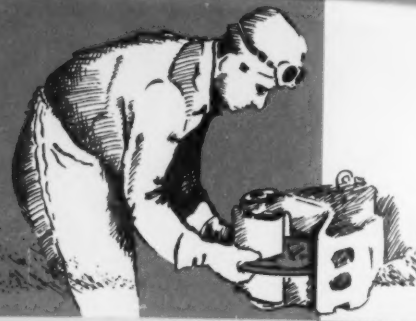
## INTERLOCKING COUPLER

The Type "F" coupler was developed, at the request of the railroads, for freight service after the proven ability of the highly successful Type "H" tightlock coupler in passenger service. Stronger than the Type "E", with interlocking wings for alignment, the Type "F" is proving its many advantages in service today.

None of the parts are machined, but with close tolerance control the free slack between knuckles has been reduced to about 50 per cent of that in the "E". Another safety factor is the centrally located shelf on the lower front face which serves to support a conventional type coupler in event of a pull-out.

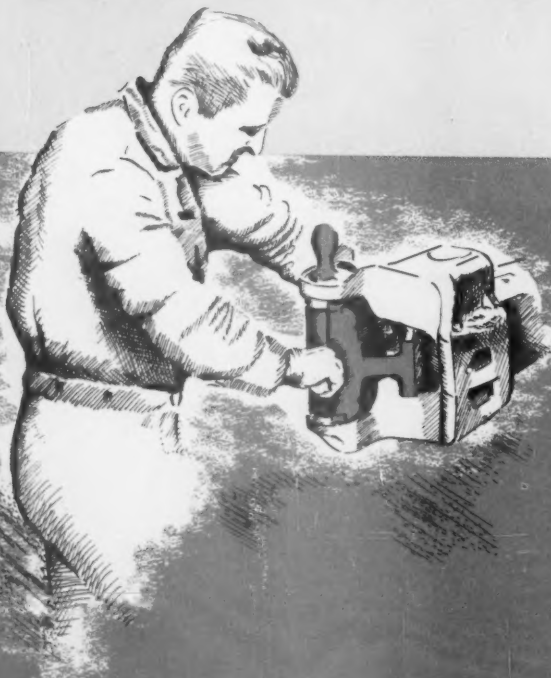


# STANDARD "E" COUPLER



47  
GAUGES

18  
GAUGES  
POINTS



Illustrated above are the 47 gauges used on the "E" coupler. Shown on this page are two of the numerous gauging operations which all National "E" couplers must pass before shipment to railroads. On the next page the magnafluxing operation is illustrated.

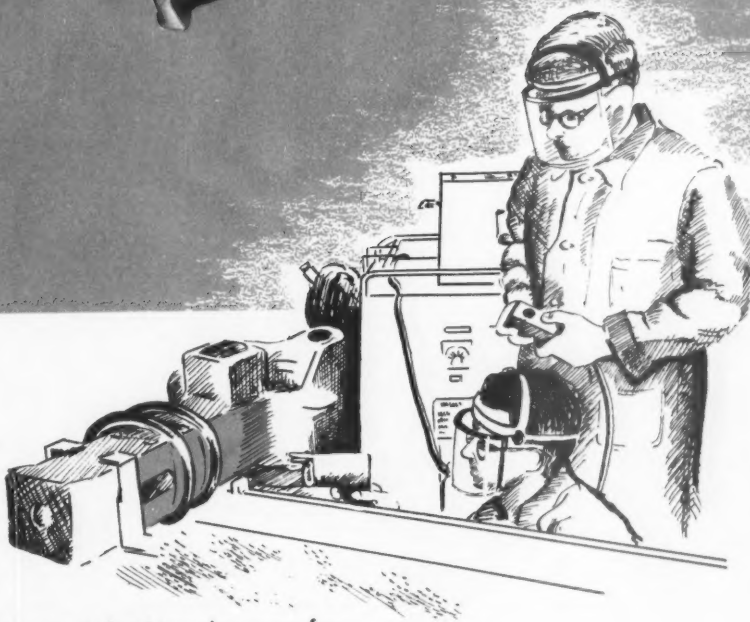
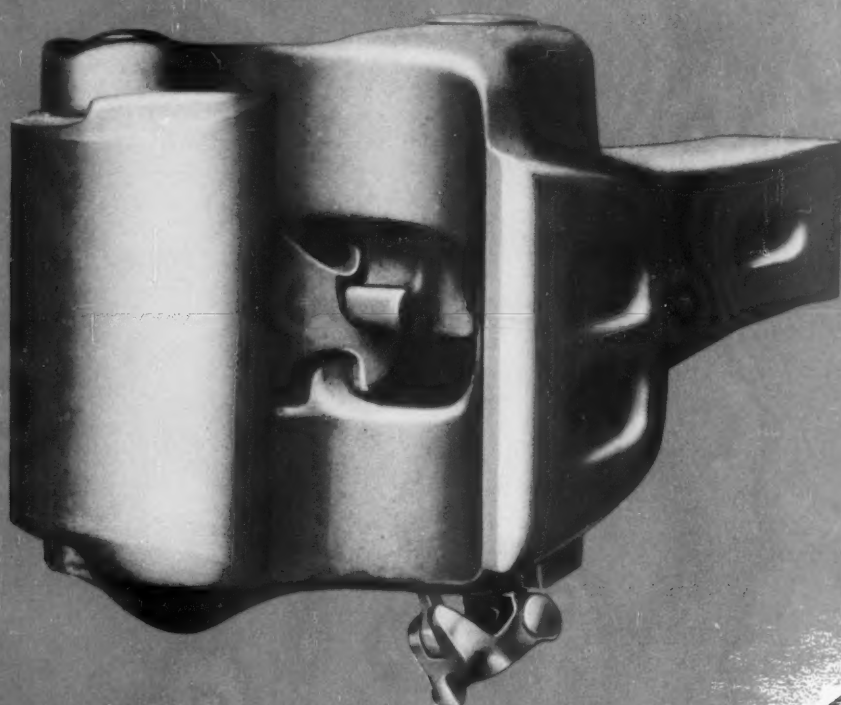
47

JUGES

82

UGING

INTS



The A.A.R. Standard Type E-60 coupler, proud successor to the Type "D" coupler, became standard in 1932. It is made of Grade B Steel with high tensile steel knuckle and lock. A set of manufacturing gauges for this type of coupler costs approximately \$14,000. with several sets required for quantity production (A set of master gauges required for making and checking the manufacturing gauges costs \$12,000.). This type of coupler is also produced in high tensile steel.

The high tensile steel knuckle is purposely designed to be somewhat weaker than the body of the coupler or attachments. In other words, it is the "safety valve" used to protect the more expensive and less readily replaceable parts of the draft system.

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31

**NATIONAL**  
MALLEABLE AND STEEL  
CASTINGS COMPANY  
CLEVELAND 6, OHIO

TYPE "H" TIGHTLOCK  
COUPLER



**36** GAUGES  
**167** GAUGING  
POINTS  
**10** MACHINING  
OPERATIONS  
TO CLOSE  
TOLERANCES

Introduced to the railroads in 1936, the Tightlock coupler for passenger car service quickly proved itself to be one of the greatest safety factors ever used by the railroads. In addition, the elimination of free slack between the knuckles made for greater passenger comfort than was heretofore possible.

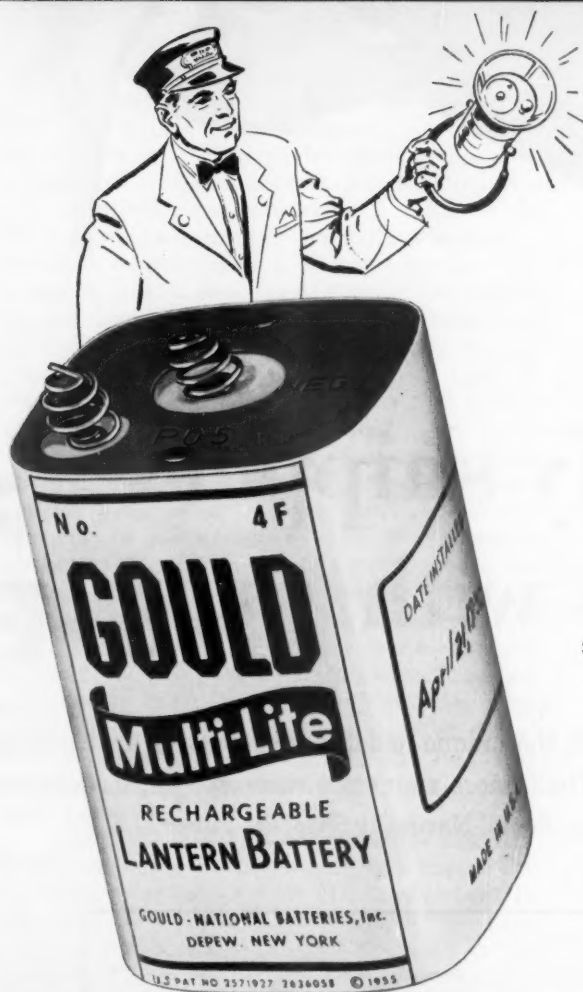
National is proud to have been the largest contributor to the development of this coupler.



IT'S NEW! IT'S REVOLUTIONARY!

# THE MULTI-LITE

RECHARGEABLE LANTERN BATTERY BY GOULD



## Gives Years of Service

Here is truly the ultimate in a trainmen's lantern battery! Multi-Lite—a hermetically-sealed nickel cadmium battery that can be recharged a *minimum* of 250 times—gives years of service under ordinary usage. Comparable to ordinary batteries in capacity and size, Multi-Lite assures you of original capacity always... a high intensity beam of light.

With the Multi-Lite there is no regular battery replacement. Simply remove the battery from the lantern periodically for recharging. Ten Multi-Lites may be charged simultaneously on one Gould gang charger, which is available for railroad use. Full battery capacity is completely renewed in a few hours.

For full information on the Multi-Lite trainmen's lantern battery or for a complete demonstration by a Gould factory representative, fill out and mail the coupon below... TODAY!

### SPECIAL ADVANTAGES

- The battery may stand in a partially or fully discharged condition for extended periods... self discharge of the battery is very low.
- The battery maintains high voltage in use with high light intensity throughout each cycle.
- There is no corrosion or battery leakage during the life of these hermetically sealed cells.
- A battery that has 250 use cycles.
- Substantial store room savings... Drastic reduction of storeroom inventory. Can be stored indefinitely with no harmful effects.

MAIL THIS COUPON **TODAY!**

# GOULD Batteries

GOULD-NATIONAL BATTERIES, INC.  
MULTI-LITE DIVISION  
DEPEW, N. Y.

GOULD-NATIONAL BATTERIES, INC.  
Multi-Lite Division, Department RA-75  
DEPEW, N. Y.

Gentlemen:

Please send me additional information on Multi-Lite. ☐

Please have a representative call. ☐

Name .....

Railroad .....

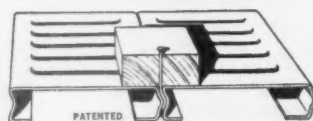
Address .....

City ..... Zone ..... State .....



## Satisfy shippers and cut costs with **N-S-F**

The secure steel construction of N-S-F, with the unique nailable steel grooves for blocking, satisfies the requirements of every shipper. What's more, NAILABLE STEEL FLOORING eliminates costly out-of-service time caused by bad-order floors. Naturally Shippers Favor N-S-F.



NAILABLE STEEL FLOORING is made of low-alloy N-A-X HIGH-TENSILE steel—remarkably strong, corrosion resistant—formed into channels, and welded together to form a unique nailing groove. Nail is clinched in tight grip of steel, yet can be readily removed.

Complete engineering and cost data available from Great Lakes Steel Corporation, Steel Floor Division, Ecorse, Detroit 29, Michigan. Sales representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal, and New York.

**GREAT LAKES STEEL CORPORATION**

UNIT OF  
**NATIONAL STEEL CORPORATION**

**NAILABLE STEEL FLOORING  
PAVES THE WAY TO ALL-STEEL FREIGHT CARS**

11-5F-2A

## Cost-Finding—Is It Necessary or Desirable?

It is hard to avoid the conclusion that cost calculations are going to enter more and more into the determination of railroad freight rates. This seems likely to happen whether or not the railroads elect on their own initiative to do more studying of costs and methods of cost-finding than they have. More and more railroad traffic, all the time, is being subjected to competition from other forms of transportation—and to resolve rate controversies in this area, the ICC must rely heavily on cost data. To the extent that such data are not forthcoming in convincing array from railroad sources, the ICC will have to fall back upon its own data and methods. These, in this paper's opinion, may be open to question.\*

Cost-finding is a dangerous business—no doubt about it. But, if it is inevitable, then costs as developed by practical railroad men are certainly likely to be less hazardous than those compiled solely on a theoretical basis. There are at least two or three U.S. railroads which already have developed comprehensive cost-finding procedures, and which are highly pleased with the results they have achieved. In any event, the situation of the railroads which have this information is no more endangered than that of the railroads which do not have it—and several additional railroads are taking the initial steps toward providing themselves with more information in this area.

One of the pioneer railroads on this continent in the systematic compilation of such data is the Canadian National—and an article elsewhere in this issue by CNR's vice-president S. W. Fairweather reveals that company's approach to the problem. The British railways also are deeply committed to the accumulation of cost data and, in the April issue of the *British Transport Review*, A. W. Tait, director of cost-finding for the British railways, reports some of the whys and wherefores. He says (in part):

"How is it that British railways after 100 years of averaging their costs over the whole railway system and charging 'what the traffic would bear' are now looking more closely at the cost of particular traffics and services, as a necessary part of the process of fixing their prices? The main reason is that the levying of average prices is only possible under conditions of monopoly.

These no longer exist. We have experienced rapid and continuing expansion of road transport until in few places and for few traffics has road failed to become a challenging competitor to rail. And road transport, except where it has a local monopoly, has close regard to the costs of small individual units in fixing charges. . . . In today's situation railways must compete if they are to survive, and they cannot compete successfully, and at the same time pay their way, unless they have a more detailed knowledge of the relative costs of particular traffics and services."

Mr. Tait, being a practical railroader, is not interested in past costs (except as they shed light on future costs)—and he does not have much enthusiasm for the allocation of indirect costs. He would (as we understand him) calculate in detail only the *direct costs*—with the understanding that each rate must cover these direct costs, plus a greater or less contribution toward meeting indirect costs "in accordance with the possibilities of a competitive market."

There is a lot of nonsense being purveyed in this area by those who are evidently relying heavily on the ignorance of their audiences. For instance, a spokesman for a misguided segment of the trucking business which is opposing the "Weeks Report" is publicly contending that pricing by the railroads to attract competitive traffic would put a burden on so-called "rail-bound" shippers. Of course, the very opposite is what actually happens in such a case.

Let's suppose there is some traffic now moving by truck, and on which the railroad rates are entirely "paper rates." Suppose the railroads reduce these "paper rates" to a level which will meet all their *direct costs*, plus 20 per cent (as a contribution toward "overhead" costs). Suppose these new rates attract \$1,200,000 of traffic to the railroads. It costs the railroads \$1,000,000 extra to handle this business, but the railroads have \$200,000 more toward "overhead" costs. If they had not gone out after this competitive traffic, they would have to have collected this \$200,000 from their "rail-bound" patrons.

Thus, when the railroads go out after competitive traffic by making rates which cover less than *pro rata* of overhead costs, they do *not* put a burden on their rail-bound patrons, but remove a burden from them.

Cost-finding has its dangers—especially in the hands of theorists. It is certainly no cure-all. But it is an inevitable corollary to competition—and, in the skilled hands of practical railroad men, it can be a powerful tool for dealing wisely and effectively with competition. Such, in any event, is plainly the conclusion arrived at by British railway people—who appear to have made a lot of progress in this area.

\* See *Railway Age*, May 23, page 25.





## Traffic Lights Protect Crossings

... IN THIS DOWNTOWN SWITCHING AREA

Colorlight signals govern switching movements at industries and freighthouse where streets carry heavy vehicular traffic—Two-way radio aids watchman control traffic lights and railroad signals

By an investment of \$79,000 the Chesapeake & Ohio has achieved greater safety at several busy grade crossings in downtown Richmond, Va., while realizing a 48% annual return on the investment.

The project was planned by the road's signal and communications forces with the cooperation of the city traffic department. It provides protection at crossings at grade of six streets by tracks serving a freighthouse and several industries. These crossings formerly were protected by watchmen on the ground, 11 5-day men and 5 swing men being required. The growing volume of automobile traffic and the tendency of motorists to ignore watchmen's warnings made their work hazardous and impeded train movements.

The freighthouse is east of Ninth street and north of Canal street. The tracks from the west which enter the freighthouse are stub end. The freight yard is near Second street which is west of this freighthouse. When a switch engine in the Second street yard has to move a cut of cars to the freighthouse, the move is made into this area diagonally crossing Sixth, Seventh and Eighth streets. One switch crew does all the work in this area; therefore, the possibility of opposing moves is eliminated.

Canal is an important east and west street which handles heavy traffic both ways. Ninth street handles heavy traffic north and south. Eighth street is a one-way street, southbound only. Seventh street is one-way, north only. Sixth street handles traffic both north and south, and Byrd street handles traffic both east and west. To avoid delay to street traffic during rush hours, no switching is done between 7 and 9 a.m., and 5 and 7 p.m.

Conventional red-yellow-green traffic lights are in service at intersections of streets throughout Richmond, including some intersections in the switching area. In order to get approval from city authorities, this same type of traffic light was utilized in the new protection project to stop street traffic short of the railroad tracks. If a motorist disregards one of the traffic lights at a railroad track, he is subject to the same fine as if he had disobeyed a traffic light at a street intersection. Some of the traffic lights previously in service now serve with additional controls in the new crossing protection system.

### Colorlight Signals for Switching

Switching moves over the crossings are governed by conventional colorlight signals. Such a signal normally displays the red aspect. When a train is to move over a crossing, the street traffic lights are made to display yellow and then red. The aspect of the colorlight signal then changes from red to green to direct the engine crew to proceed over the crossing.

For a track or group of tracks crossing a street, there is one group of eastward and westward colorlight signals. When controlled, all signals in the group are cleared at the same time.

With some exceptions, the traffic lights and railroad colorlight signals are controlled manually by a control machine in a three-story tower just east of Eighth street. On the panel of this machine, the diagram shows the tracks and streets.

Eight tracks extend from the west across Ninth street

into the freighthouse where they stub end. Tracks 1, 2, 3, 4, 5 and 7 are in one group, which is protected by one northward traffic signal and one southward traffic signal, marked "N" and "S" on the plan. Switching moves across Ninth street on any of these six tracks are directed by colorlight signals, marked 10 on the plan.

When a switch engine is ready to make a move across Ninth street on any one of these six tracks, the watchman in the tower throws Lever 10 from the "ST" position to the "RR" position. This changes the aspects of the traffic lights from green to yellow, and then from yellow to red, in the proper timing sequence, thus stopping street traffic. Then the aspects of the colorlight signal 10 change from red to green to direct the switch engine to move across Ninth street. After the engine and cars are clear of the street, the lever is returned to the "ST" position. Tracks 9 and 11 are in another group, with separate traffic lights and colorlight signals which are controlled by lever No. 11 in a manner explained above.

### **Combined with Timing Control**

Two tracks extend diagonally across the intersection of Ninth and Canal streets. A four-direction traffic light is suspended over the center of this intersection, and four one-direction traffic lights are located on the "far" sides at the right. Lever 12 on the control machine is for the control of traffic lights and railroad signals at this intersection.

Normally this lever is in the "ST" position for street traffic, and the traffic lights are then controlled in the conventional manner by an automatic timing system to direct traffic to move for timed intervals on one street or the other.

Whenever a switch engine is prepared to make a move over the intersection, the watchman throws Lever 12 to the "RR" position. This cuts out the automatic timing control of the traffic lights; the ones which are red stay red and the ones that are green change from green to yellow, and from yellow to red in the standard timing sequence, so that street traffic approaching from all four directions is stopped short of the intersection, and short of the tracks.

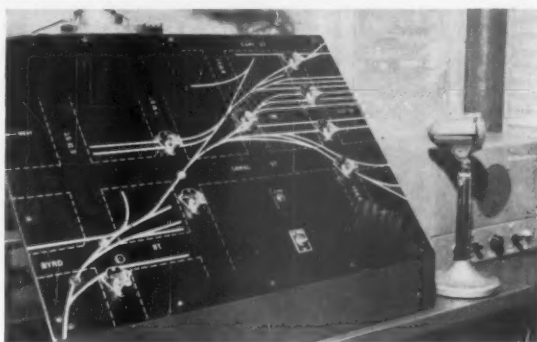
After all traffic lights are red, the colorlight signals change from red to green, directing the engine crew to move over the crossing.

### **Automatic-Manual at Sixth Street**

The railroad runs diagonally across the intersection of Sixth and Byrd streets. This crossing is beyond the range of vision of the watchman. When a switch crew in the Second street yard has a cut of cars ready to move into the freighthouse area, the conductor is instructed to telephone or radio the watchman about the proposed move. To inform the watchman exactly when the switch engine is approaching Sixth street, a special approach track circuit 250 ft long was installed west of Sixth street to control a track-occupancy lamp and communicator bell on the watchman's control panel. With Lever 4, in the "AUTO" position, an eastward movement on the approach track circuit will automatically cause the traffic signals to stop street traffic, and cause the



**COLORLIGHT SIGNALS** governing switching moves over Eighth street are controlled by watchman in the tower.



**INDICATION LAMPS** on watchman's control panel are lighted when a switch engine enters the Sixth or Seventh street crossing.

colorlight signals to display green thus permitting train movements across the intersection of Byrd and Sixth streets.

This crossing also includes a track circuit on the section of the so-called main tracks that extends across the intersection. This track circuit starts about 15 ft west of Signals E4 and ends about 15 ft east of Signals W4, the total length being about 250 ft. This track circuit is repeated by an occupancy lamp on the watchman's panel.

Normally Lever 4, for the control of the sixth and Byrd streets crossing, stands on center or "automatic" position.

When it is in this position, an engineer could start his engine slowly and "creep up" on the 15-ft section of the track circuit in approach to Signals E4 or W4. This would control the traffic lights to display red, and would clear Signals E4 and W4 to display green, permitting the move across the intersection. In some instances, in making local switching moves, the engine or cars must occupy one of the ends of the crossing track circuit, even though no move is to be made over the crossing. In such cases, the conductor phones or radios the watchman and he throws Lever 4 to the left under "ST". This cuts out the track-circuit control so that the traffic lights remain on normal control although the track circuit may be occupied. Also, when the watchman must prevent the

switch engine from clearing the signals by occupying the approach track circuit, he places Lever 4 in the "ST" position which holds the traffic lights on normal control and the colorlight signals red.

The seven tracks which cross Eighth street are treated as a group. This is a one-way street for traffic southbound only. As extra protection, two southward traffic lights were installed; one over each half of the pavement.

When the lever for the control of this crossing is in the "RR" position, the traffic lights at the intersection of Eighth and Canal holds the "green" for east and west traffic on Canal.

### Radio on Switch Engines

In order to operate this system of protection properly, the watchman, in his tower, must know exactly when the switching crew is ready to make each move across the street. When the crew is working near the tower the watchman can see the conductor, but much of the area is beyond the range of vision of the watchman. Therefore radio communication was installed as part of this project.

The radio fixed station is at the watchman's tower. On his desk he has a microphone and a remote control unit including a loudspeaker with control switches. Each of the three switch engines which may work in this area is equipped with radio transmitter-receiver apparatus, loudspeaker, handset and controls. A talk-back loudspeaker is installed on the footboard for use by the conductor.

All calls received on the locomotive are reproduced by both loudspeakers; the one in the cab and the one on the footboard. If the conductor is on the footboard, he can answer an incoming radio call by pressing one of two knee switches which changes circuits to convert his receiving loudspeaker to a talk-back speaker, and keys the transmitter on the locomotive to broadcast his reply.

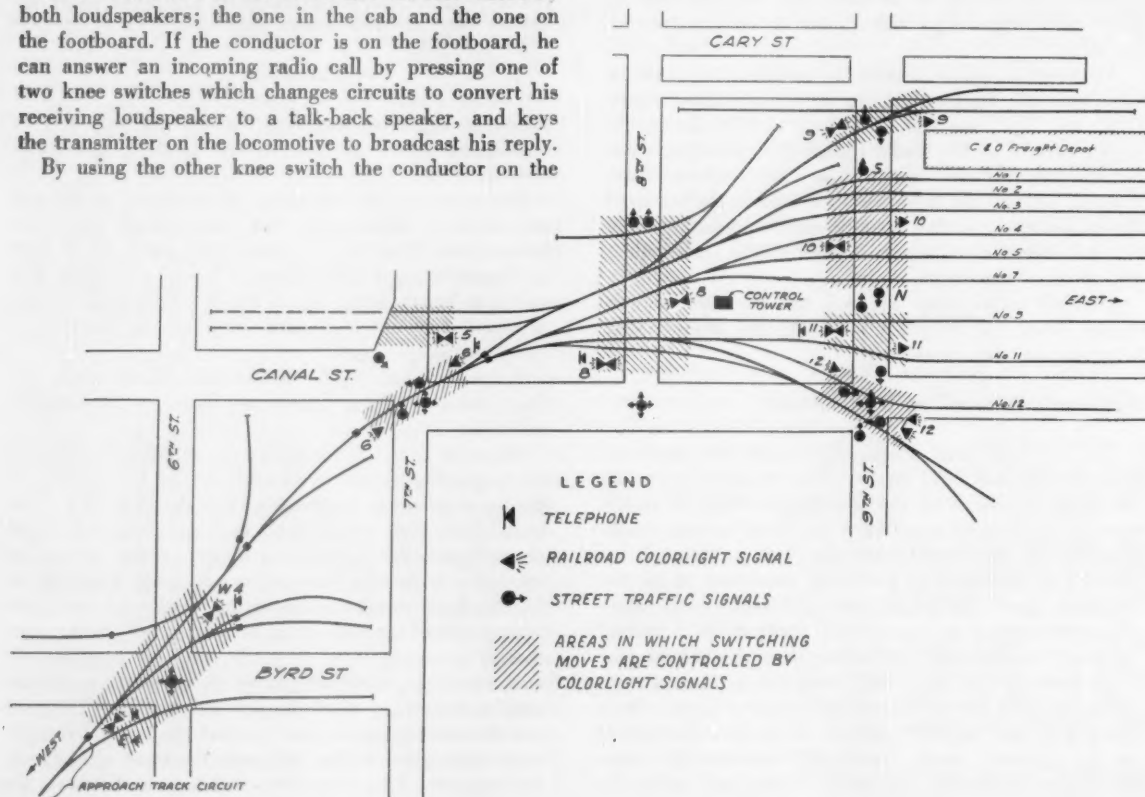
By using the other knee switch the conductor on the

footboard can call "intercom" to the engineman in his cab, without the call going out via radio. In a similar manner, the engineman by not using the push-to-talk button on his handset, is able to place an "intercom" call to the conductor's loudspeaker on the footboard.

### Communication Boxes in Switching Area

From the radio equipment in the tower a circuit extends to five communications boxes (with telephone handsets) at strategic locations in this switching area. If the conductor at one of the five communication boxes wants to talk by radio to his locomotive crew, he removes the telephone handset from its hook and presses the push-to-talk button on the handle of the set when he speaks into the transmitter. Operation of the button remotely controls the radio transmitter at the tower so that the conductor's call goes out by radio to the locomotive. The engineman's answer via radio is received at the tower, and goes via the pair of wires to the handset which is being used by the conductor at the communication box.

This project was planned by signal and communication forces of the Chesapeake & Ohio. The colorlight signals, relays and other conventional equipment were furnished by Union Switch & Signal Division of Westinghouse Air Brake Company. The traffic light and automatic timing controls were made by General Electric Company. The radio was made by Westinghouse Electric Corporation, and the telephone sets by Automatic Electric Company.







IN COSTING for rate-making, regard must be given to the cost of new facilities made necessary by the increase in traffic.

## What Cost Factors in Rates?

By **S. W. FAIRWEATHER**  
Vice-President Research and Development  
Canadian National

The art of determining the cost of railway service in particular instances is the art of dividing expenses between direct and indirect costs. It is obvious, of course, that all costs—both direct and indirect—must be taken care of.

Statistically, therefore, there is an average cost applicable to average traffic. On the other hand, if one considers an increment in traffic, common sense indicates that the increment in cost accompanying the increment in traffic will probably be less than the average. This increase in cost for traffic increments is loosely spoken of as out-of-pocket cost.

The criterion in determining out-of-pocket cost in theory is simple. One simply asks the question: How much will be added to cost if the traffic in question is added to the then-existing traffic pattern; or, conversely, how much will cost be reduced if the traffic in question is subtracted from the traffic pattern? While this criterion is simple, its application is fraught with many difficulties. Not the least of these difficulties is the fact that the traffic pattern which forms the basis of comparison is itself a variable. Thus, a conclusion drawn at one point in time with regard to an increment in traffic may be substantially different from a conclusion drawn at some other

time for a similar increment when the traffic pattern has changed.

An example will illustrate this point. In this case the increment in traffic is in a westward direction, and the prevailing direction of traffic is eastward. Under such circumstances, there is very little increased expense for the increment in traffic. No train-miles, no car-miles are created—therefore the added costs are slight. But what if the basic traffic pattern changes so that the preponderant direction of traffic is now westward? Under such circumstances, a western increment in traffic will add to all components of service. Other things being equal, train-miles and car-miles now will be created in both directions, resulting in substantial increment in cost. To deal with this and many other similar factors, regard must be had to probabilities. The estimator must determine how long a period his estimate of out-of-pocket cost is to be valid and what are the probabilities of conditions remaining constant.

### **All Elements Must Be Considered**

In segregating direct costs from indirect costs, all elements of cost must be considered. Many of these elements, which are loosely spoken of as overhead or fixed costs, must be considered as to some extent variable with traffic. In other words, they are direct costs. General supervision, for instance, is loosely considered as over-

head and as being fixed. In many cases this is true. There are, however, numerous instances where additional supervision will follow an increment in traffic.

The same applies to capital investment. Additional traffic may involve the addition of locomotive and car equipment or improvement in track structure or signaling. Therefore, the estimator must take care to see that the increment in traffic is investigated from the standpoint of the capacity of the railroad system (as a whole) to handle the traffic in question. Here I use the term "capacity" to mean the capacity of the physical units of the property and the administrative overhead.

### **Applying the Principles**

Two methods are used by the Canadian National in separating total expenses into direct and indirect expenses in accordance with the principles outlined above. One method is the direct incremental method, the other the statistical-analytical method. The direct incremental method is widely used to build up estimates of cost of moving additions in traffic. In following it, the increment in traffic is translated into units of service, such as car-miles, train-miles, car-days, locomotive-days, etc.

These units of service are then extended, using appropriate prices which are related to current wage and price levels. To determine the wage component requires an intimate knowledge of the wage agreements. Material costs are determined by the going issue price. Equipment requirements, if a factor, are determined by estimating the cycle time and making appropriate charges for either interest and depreciation or per diem charges.

The summation of costs by the incremental method fails, however, to cover the whole field. Common sense indicates that certain classes of costs cannot be traced in detail to the traffic in question, although it is quite evident that such costs are incurred. For instance, it is quite easy to estimate with a high degree of accuracy the wage cost and the fuel consumption in handling traffic under specific conditions. The case is quite different when we figure wear and tear on the property. Nevertheless, any cost analysis which ignores wear and tear on the property arising from use would be unrealistic. Therefore, recourse must be had to analytical treatment of average costs of maintenance in estimating wear and tear.

This approach involves statistical analyses of the record of operating expenses in relation to variations in traffic. The basic figures must, in the first instance, be adjudged to remove so far as practical the effect of all other variables except changes in traffic.

By this means it is possible to ascertain with a reasonable degree of accuracy the amount of maintenance expense which would be added as a result of handling an increment in traffic.

It is prudent practice to check the result of the mathematical analysis with a common sense appreciation in detail of the various factors. For instance, in dealing with maintenance of way and structures common sense indicates that practically all wear on rails is due to traffic. But when it comes to such items as ties, weathering also becomes a factor. It might be considered that 50% of the life of a tie was ascribable to traffic and 50% to weathering. A further example would be a fence post, where weathering is the sole cause of maintenance.

Another field to which the incremental method is not

applicable is allowance for increments to the property traceable to increments in traffic over a period of time. (In a short-term view no such increase in the property is indicated.) Here recourse must be had to judgment, aided by statistical methods. In this case judgment must be exercised as to how permanent the traffic increase is. If it is thought that the traffic in question will last for a substantial period of time, then obviously its existence ultimately will be the cause of additions to the property. Such additions might be yard sticks, passing sidings, freight-handling facilities, etc. Due allowance must be made for this in determining the out-of-pocket costs.

The steps which enter into a typical out-of-pocket cost study may be summarized as follows:

1. The nature of the traffic in question is determined in detail. It must be measured in tons, established as to direction, nature of loading (i.e., carload or lcl and, in the latter case, the minimum carload), the pattern of its distribution throughout the year, and relative permanence.

2. The traffic pattern to which traffic increment will be added is established, giving an appreciation of how much unused capacity exists. Here again, regard is given to direction and to seasonal fluctuations.

3. The physical facilities which are to be used are determined. This covers such factors as determination of the ruling grades, the size of the locomotive and size of train.

4. The degree of added service is determined, measured in such units of train-miles, car-miles or car-days.

5. The direct costs of these units of service are estimated at unit prices, based on an appreciation of the applicability of wage agreements and of the issue price of materials. In the case of wages, such elements as pensions, unemployment insurance and holiday allowance must be taken into account.

6. Wear and tear on the property is estimated by statistical methods.

7. Increment in interest and depreciation on equipment and facilities, or, in lieu thereof, per diem on foreign-owned equipment, is determined. In the case of equipment, estimated cycle times and utility factors are used.

8. If the traffic in question will be relatively permanent, an estimate of increment in capital to provide additional facilities is made and interest and depreciation is charged thereon, using annuity and present worth methods.

9. To the expenses as determined above, there is generally added a 10% allowance for contingencies to cover unexpected and incidental variations and to take care of such uncertainties as wrecks and loss and damage claims. However, in some cases it is feasible to estimate these items directly.

It will be seen that the typical out-of-pocket cost estimate consists of a mixture of items, some directly estimated and some inferred by analytical methods. It follows, too, that the difference between the rate charged for service and the out-of-pocket cost of the service cannot be described as profit. It can be described only as a contribution to indirect costs and to profit, or, as more commonly put, to general overhead and profit. Indirect costs and profit must be incorporated at some stage in costs if the enterprise is to have a profit. Out-of-pocket cost, therefore, when used to justify a rate, implies that the rejected items of indirect costs can be levied on some other traffic.

## ESTIMATED OUT-OF-POCKET COSTS

TRANSPORTING 100 CARS FROM "A" TO "D"

Class of Car: .....Box      Ave. Tare Weight: .....22 Tons      Power: .....Diesel  
 Ownership: .....System      Ave. Net Weight: .....20 Tons      Region: .....Western  
 % of Empty Return: .....50      Loaded Car Haul: .....326 Mls.

### UNITS OF SERVICE

	"A" to "B"	"B" to "C"	"C" to "D"	Total Units of Service
1. Trip miles—Train .....	127	140	59	326
2. " " —Locomotive .....	129	141	60	330
3. Loaded car haul .....	127	140	59	326
4. Weight of locomotive (tons) .....	230	230	230	
5. Average equated tons per train <sup>1</sup> (manifest) .....	3705	3689	3791	
6. Equated gross tons per loaded car <sup>2</sup> .....	54	54	54	
7. Number of trains required—Going <sup>3</sup> .....	1.5	1.5	1.4	
—Returning .....	1.5	1.5	....	
8. Train-miles .....	381	420	165	966
9. Locomotive-miles .....	387	423	168	978
10. Caboose car-miles .....	381	420	165	966
11. Loaded car-miles .....				32,600
12. Empty car-miles .....				16,300
13. Total car-miles, excluding caboose .....				48,900
14. Total car-miles, including caboose .....				49,866
15. Net ton-miles (000) .....				652
16. Tare ton-miles (000) .....				1,076
17. Caboose ton-miles (000) .....				19
18. Locomotive ton-miles (000)—Factor of 1.5 <sup>4</sup> .....				337
19. Total gross ton-miles (000) .....				2,084
20. Wages per train (train & eng'men) \$ .....	87.49	93.76	98.76	
21. Total wage cost (train & eng'men) \$ .....	262	281	138	681
22. Fuel—Locos: 214 gals., Cars: 1,760 gals., Cabs: 35 gals. Net tonnage: 346 Gals.,      Total: 2,355 Gals.				

### UNITS OF COST

	Cost in Dollars*
23. Train & enginemen's wages <sup>5</sup> (incl. vacation) .....	....
24. Fuel <sup>5</sup> .....	....
25. Enginehouse expense .....	....
26. Station expense, billing, etc. ....	....
27. Train dispatching .....	....
28. Other loco. supplies: Diesel lubrication .....	....
Other .....	....
29. Train supplies and expenses .....	....
30. Switching—Initial, intermediate, final .....	....
31. Other transportation expense <sup>6</sup> .....	....
32. Maintenance of equipment—Cars .....	....
—Road locomotives .....	....
33. Maintenance of way & structures .....	....
34. Freight traffic expense <sup>6</sup> .....	....
35. General accounting expense <sup>6</sup> .....	....
36. Pensions, unemployment insurance, Workmen's compensation .....	....
37. Allowance for hauling company material .....	....
38. Miscellaneous & contingencies .....	....
<b>TOTAL OPERATING EXPENSES</b>	
39. Int. & dep.—Locos. yard & road .....	....
—Cars (incl. cabooses) .....	....
40. Capital increment on facilities <sup>7</sup> .....	....

### TOTAL OUT-OF-POCKET COST\*

COST PER CAR*	....
COST PER NET TON*	....
COST PER LOADED CAR-MILE*	....
COST PER HUNDRED POUNDS*	....
COST PER NET TON-MILE*	....

\* Figures to be filled in

### NOTES OF EXPLANATION

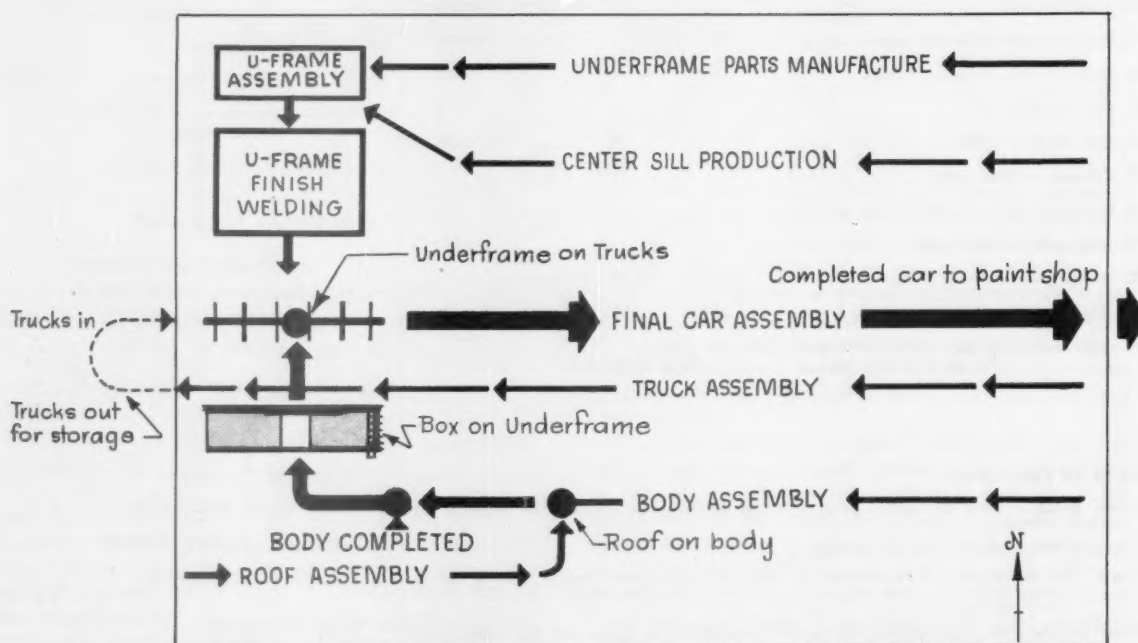
- <sup>1</sup> Item 5.—Actual gross tons behind power unit plus car factor or allowance for frictional car resistance.
- <sup>2</sup> Item 6.—Gross weight of car plus car factor.
- <sup>3</sup> Item 7.—It is assumed that the increment in traffic will move in the tonnage direction thereby necessitating the return of power and crews. Trains between "C" and "D" are in turnaround service.
- <sup>4</sup> Item 18.—The factor is an allowance for greater track damage by power unit than trailing tons.
- <sup>5</sup> Items 23 and 24.—to be determined directly from units of service required
- <sup>6</sup> Items 31, 34, and 35, as well as superintendence (included in various items), are taken as being 50% variable with traffic.
- <sup>7</sup> Item 40.—Incremental allowance for additions to property and facilities.





Instead of attaching the sides, ends and roof individually to the underframe, the entire body is assembled separately and lifted in place as the Great Northern employs a...

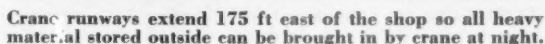
## New Way to Build Box Cars



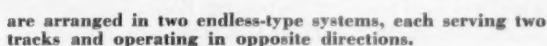
**HERE'S HOW ITS DONE**—Center sills and parts that go on it (bolsters, cross-bearers, end and side sills, etc.) are made along north side of shop, and the underframe assembled in northwest corner. Bodies are made along other side, where roofs are put on halfway down the line. In the

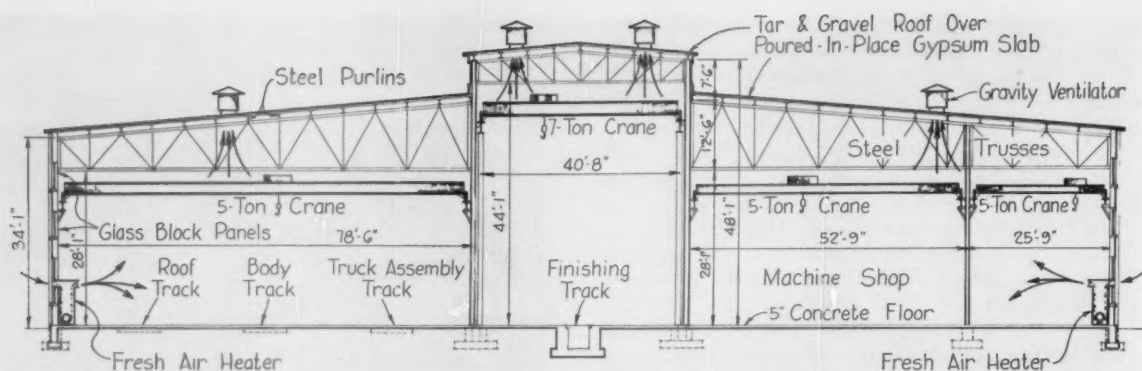
middle of the shop the underframe is put on the trucks and the completed body on the underframe. Finishing steel jobs are done as the cars proceed eastward and out of the shop for painting and lumber work (side and end linings, routing boards, etc.).

Selected panels are also interconnected with other panels so that if no welding machine is available to sup-



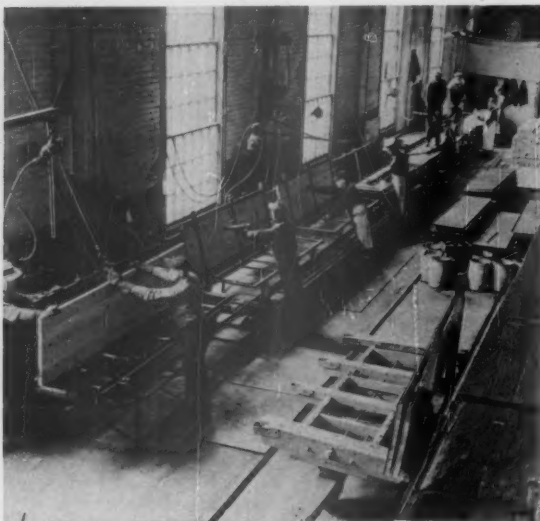
For example, at a given panel, say Panel F, there are five welding machines and five outlets. The first five men who want to weld from Panel F merely plug into a receptacle direct-connected to one of the five welding machines at Panel F. But if a sixth man wants to weld from the same panel (F), though all the outlets are in use, he can still draw power from the panel at F without having to string electrical cable along the shop floor all the way to the nearest unoccupied welding machine. He merely plugs his electrode cable into an extra outlet on Panel F and hooks up the interconnection at a remote



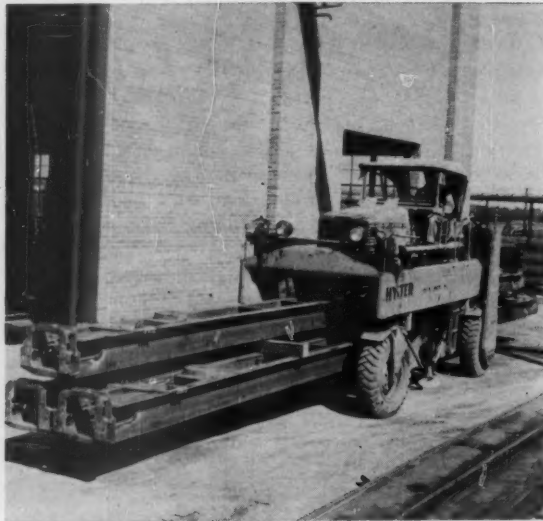


**VENTILATION** is combined with heating in a pressure-type system. Fresh air is drawn in through louvers in sidewalls by four individual units located at intervals

along each wall. The air is heated as necessary by the units, then blown out into the shop area. Exhaust is through gravity-type ventilators in roof.



During the day, many heavy parts are handled by trucks to avoid having to clear the working area below the crane.



Half the cars get Nailable Steel floor, the other half wood floors with steel plate pre-assembled into panels.

station which has the available welding machine that will furnish him current from Panel F.

The shop—which has a working area 200 by 305 ft and a 54 by 110 ft extension on one side for locker room and office space—has four through tracks with openings in the end walls fitted with motor-driven overhead rolling steel doors. One of the tracks is served by a pit 260 ft long for underside work on completed cars. Six overhead traveling cranes have been installed to serve various areas of the shop. In addition, 2-ton capacity jib cranes with 14-ft radii are mounted on building columns at strategic points around the machine shop area.

One of the traveling cranes extends 175 ft east of the shop into the outdoor storage area where the GN keeps all sizes of steel plates, heavy channels, Z-sections for center sills and other heavy material. Movement of all this material into the shop is by the traveling crane, and it is done at night so workmen do not have to clear the area under the path of the crane with its heavy load.

The floor of the shop is a 5½-in. reinforced-concrete slab, coated with a hardening agent. Sleeves of 8-in. pipe have been placed in the concrete floor along each side of the shop tracks to hold the legs of the portable scaffold-

ing used in working on the tops and upper sides of cars. The pipe sleeves are placed flush with the floor 7 ft 8 in. from the center line of the tracks at 18-ft intervals.

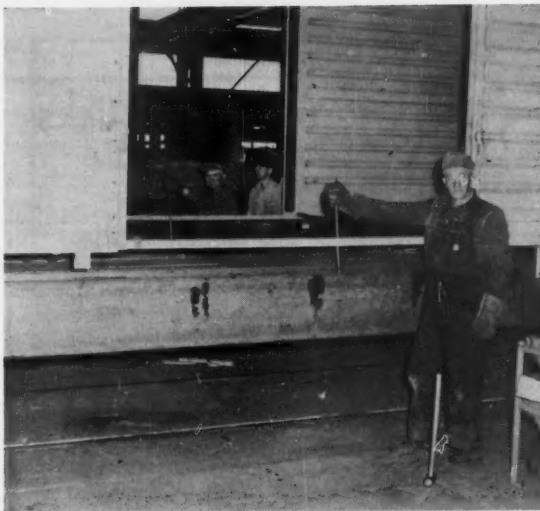
### Two Car-Puller Systems

Movement of cars, unmounted bodies, roofs and trucks is by two winch-type car pullers, at the east end of the shop, each serving one of the two pairs of tracks. The car-puller systems are endless, the cables being run from the winches through pulleys located at the opposite end of the shop then back to the winches again.

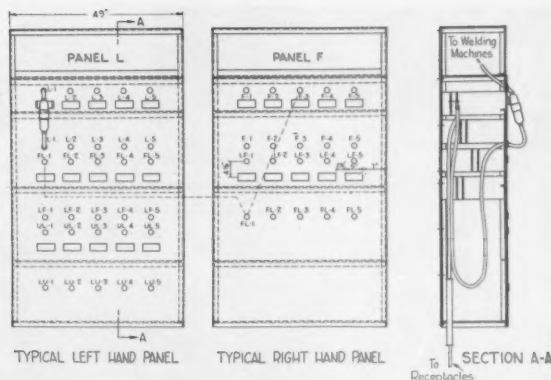
The endless cable moves in one direction for the north track of each pair, the other direction for the south track. Thus the roofs move one way, the body the other, on the south pair of tracks until the two are joined and proceed together down the body track. The same is true for the trucks and assembled car on the north pair of tracks served by the pulley system. A groove is provided in the floor to accommodate the cables so that they do not interfere with work alongside the tracks.

Heating in the main shop is combined with ventilation in a pressure-type system. The system incorporates

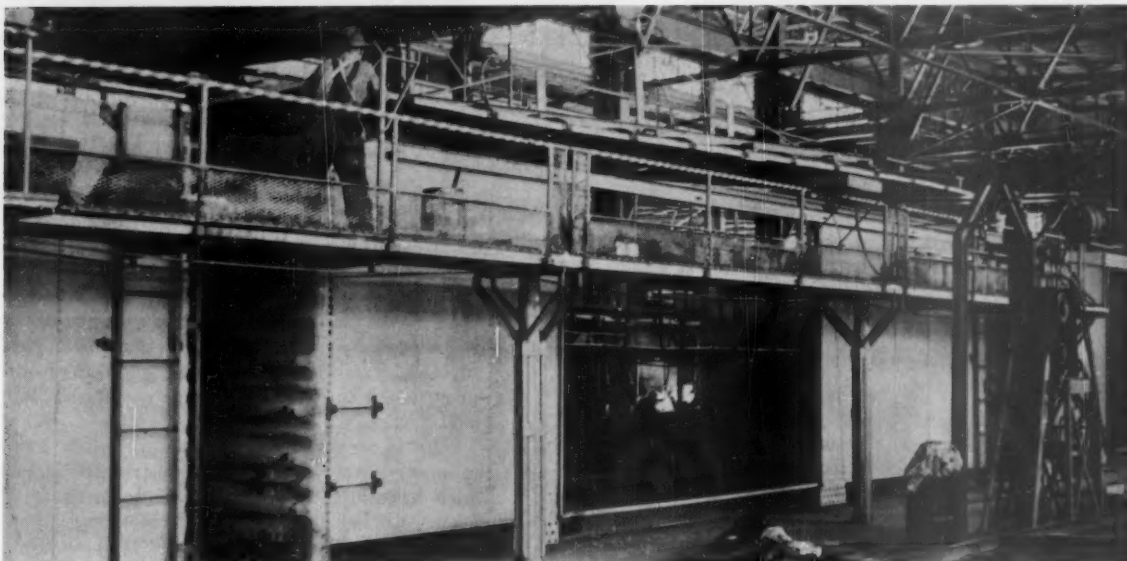




While the body is supported by a pair of hoists, two men with drift pins easily line it up for lowering into place.



**FLEXIBILITY IN WELDING**—To weld from Panel L with current furnished by a machine at F, the electrode cable is plugged into receptacle FL-1 on Panel L. This is permanently connected by an underfloor cable to FL-1 on Panel F. This end of the connecting cable is a plug, which is inserted into any available welding machine outlet (F-3 shown), and welder 3 at Panel F now supplies outlet FL-1 at L. The LU and UL designations on Panel L indicate a similar tie-in to Panel U.



Supporting the body on low dollies gives lower working height and lets men do half the work without scaffolding.

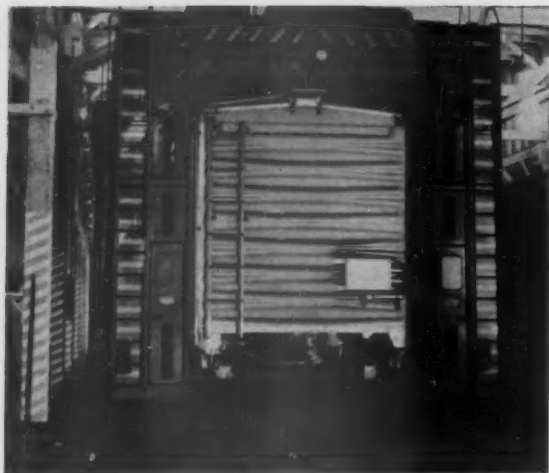
## FEATURES OF CARS BEING BUILT

The first major program undertaken at St. Cloud was the construction of 1,000 box cars at the rate of 12 a day. The cars in this program are 50-ton box with an inside length of 40½ ft. The outside width and height are 10 ft 5 in. and 13 ft 11 in., respectively. Inside width and height are 9 ft 2 in. and 10½ ft. and the capacity is 3,890 cu ft. Half the cars will have 15-ft doors and half will have 6-ft doors.

All the cars will have Ride Control trucks, hand-operated slack adjusters and reflective tape on the exterior. There will be 750 cars with waste-substitute boxes, 250 with waste and Neoprene packing retainers. Over a half dozen different draft gears are being applied, both rubber and friction;

in some cases both types by the same manufacturer are being installed. The first 200 cars are getting the new cast steel wheels, the remainder conventional one-wear steel wheels. All cars will have threshold plates.

A new type of side and end lining—called Nuloc—is being used on the first 500 cars. The next 500 will get plywood in extra large (10 ft 3½ in.) sheets, and all end lining will be 1½-in. tongue-and-groove. The Nuloc siding is made up of 3¼-in. boards glued together with a tongue on top and a groove on the bottom. The first five panels from the bottom are 3 boards wide (9¾ in.). The next four panels are five boards wide (16¼ in.). On top of this are two finishing boards to complete the side lining.



Two men operating this traveling spray booth take about 10 min per coat to paint the sides or the roof.

fresh-air heaters, with four along each side wall. The fresh air heaters are equipped with fans and steam heating coils. They draw in fresh air through louvered intakes in the side walls, heat the air, then blow it out into the shop area through outlets about 8 ft above the floor.

The heated fresh air circulates throughout the shop area, thence is exhausted through gravity-type ventilation in the roof.

The center of the three bays is beneath a clerestory roof, while the other two bays are beneath the main roof on either side. All of the roofs consist of a 2½-in. poured-in-place gypsum slab covered with a 5-ply built-up tar and gravel application.

#### Floors of Concrete

Both the first and second floors of the office and welfare addition to the main shop are concrete. The floor is laid over bar joists with corrugated iron forms. The floors on both levels are covered with asphalt tile. Room partitions are constructed of 2-by-4 studding, covered with rock lath and plaster. The exterior walls and ceiling are plastered over metal lath. The result of the overall construction is—for a car shop—an unusually quiet set of offices on both floors.

The main structure comprises steel columns with steel roof trusses and purlins and brick curtain walls. The addition, which provides wash, toilet and locker facilities on the first floor and offices on the second, has all-brick walls with bar joists supporting the roof.

The shop area receives an abundance of natural illumination through horizontal projected-type windows and glass-block panels along the building walls. Windows are also located in the clerestory which is situated over the center bay.

Artificial lighting is provided by both mercury-vapor and fluorescent lamps.

Lighting throughout the addition is furnished by suspended-type fluorescent fixtures. A fin-tube base-board system has been installed for heating the offices and welfare areas.

## Benchmarks and Yardsticks

**THE OBSERVATION** is frequently made that the management of some company or another "fell down," because it neglected to keep up-to-date technologically; or maybe it was faulty in its economics, and didn't notice soon enough that demand for an old-line product was vanishing.

**There are laws of technology** and of economics—and there is no business management which does not recognize, at least implicitly, that it has to obey these laws if it is to prosper. But aren't there laws of other realms, also, that play their part in the success or failure of business enterprises—and of individuals?

**For instance** a company might keep modern in technology and its economics—but run into serious trouble from failure to observe and profit by the laws of political behavior. And conduct which is of a low order ethically usually brings costly retribution, even if it is safely within the statutes which forbid fraud and theft.

**It is the customary assumption** that the incentive that keeps employees on the job is "5 o'clock and pay day." No one doubts the necessity and effectiveness of economic rewards, but the assumption that they are the only important incentives is clearly erroneous. A writer, O. A. Ohmann, in the current issue of the *Harvard Business Review*, expresses the opinion that one of the qualities that makes a boss effective is the evidence he gives that he "believes in something." In Mr. Ohmann's opinion "we may have defined the basic purposes of our industrial enterprise too narrowly, too selfishly, too materialistically."

**Why is it** that many companies, if they have the money, are putting up industrial buildings which have architectural and artistic merit—and are landscaping the grounds around these buildings? Isn't it a fair conclusion that these companies have realized that it is worth while for them to give some thought to esthetics?

**The standard treatment** of subordinates by their superiors in industry has undergone a revolution since the period prior to World War I—and probably not so much from an excess of benevolence on the part of superiors, as from cumulative experience that civility achieves better results than rudeness.

**Business enterprise is a human institution**, and it has to take into account *all* human values—not merely those of technology and economics. Business needs high-standard ethics, esthetics, political comprehension, and psychological and religious understanding—because these values are basic in dealing with people (customers, as well as employees and associates.) The variety of knowledge and virtue which is useful and necessary in business leadership is boundless. J.G.L.

# FACTS ABOUT **Exide**<sup>®</sup>

## IRONCLAD<sup>®</sup> DIESEL STARTING BATTERIES

### FINGER TIP CONTROL OF 2000 HORSES WITH EXIDE-IRONCLADS

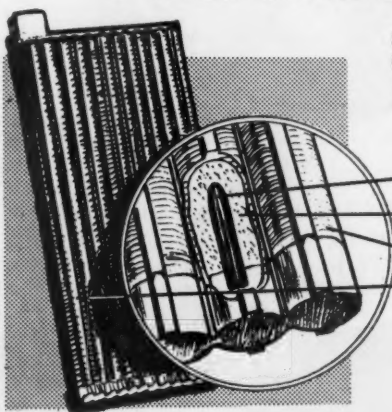
THEY SPIN 2000 H.P. DIESEL LOCOMOTIVE UNITS TO FIRING SPEED IN SECONDS. THE TREMENDOUS RESERVE POWER OF EXIDE IRONCLADS ASSURES NOT ONLY QUICK STARTING BUT ALSO THE POSITIVE OPERATION OF CONTROLS. IRONCLADS GIVE THE BEST BATTERY OPERATION WITH LOWEST COSTS BECAUSE OF EASY MAINTENANCE AND LONG SERVICE LIFE.

### BATTERIES ARE **WORKED** TO DEATH BY EXIDE ENGINEERS TO LEARN **SECRETS** OF LONGER LIFE

SINCE 1910, RESEARCHERS HAVE GREATLY IMPROVED EXIDE-IRONCLAD PERFORMANCE AND USEFUL WORKING LIFE, BUT THE BASIC IRONCLAD PRINCIPLE OF TUBULAR CONSTRUCTION REMAINS THE SAME.



LAB TESTS OF IRONCLADS AGAINST CONVENTIONAL TYPES OF BATTERIES SHOW THAT THEY GIVE BETTER PERFORMANCE...  
**AND FROM 20% TO 30% LONGER LIFE!**  
THESE TWO FACTS, DEMONSTRATED BY THOUSANDS OF BATTERY USERS, ARE THE REASON WHY...



- PROTECTED CONDUCTING GRID
- COMPRESSED ACTIVE MATERIAL
- SLOTTED RETAINER TUBE
- IRONCLAD POSITIVE PLATE

**EXIDE-IRONCLADS**  
ARE YOUR BEST POWER BUY  
**AT ANY PRICE!**

LET EXIDE HELP SOLVE YOUR DIESEL STARTING BATTERY PROBLEM ① CALL AN EXIDE SALES ENGINEER FOR FULL DETAILS. ② WRITE FOR FORM 4843-ALL ABOUT MAINTAINING AND INSTALLING DIESEL STARTING BATTERIES.

**Exide** INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.





OPERATORS make a local check of a rail joint which showed faulty indication as car passed over. Vehicle,

which is equipped for both rail and highway travel, moves along at speeds up to 16 mph while testing rail.

## New Ultrasonic Detector Car

... INDICATES RAIL DEFECTS

The Santa Fe has developed a rail-testing car which reportedly will detect head-and-web separations and bolt-hole breaks at speeds up to 16 mph.

An adaptation of the Fairmont Hy-Rail car, the vehicle carrying the testing equipment is fitted with both flange and rubber-tired wheels, enabling it to operate with equal facility on rail or highway. By manually raising or lowering the rubber-tired wheels, it is possible to move the car off the rails at any highway crossing, thereby permitting rapid clearance for trains.

Believed to be the first rail-testing car of its kind, the outfit utilizes ultrasonic frequencies to "sound-out" both rails simultaneously as it moves along. The results are recorded on a chronograph tape which indicates normal and defective conditions in the rails. When a faulty indication is recorded, the car is stopped and the operators run a local check with an ultrasonic hand-test unit at the point where the indication occurred. If the rail is found to be defective, it is marked for immediate removal and replacement by section men.

The car is operated by three men—a driver and two electronic technicians for operating the test equipment. The technicians ride in the rear of the car, seated at a picture window, which affords a clear view of the track as the car travels along.

The car was first placed in service early in March between Topeka, Kan., and Atchison. More recently, it has been used between Topeka and Emporia. The road reports that its operation has proved efficient and economical.



RECORDING of ultrasonic "sounding" of rail is made continuously on a chronograph tape in front of operator.

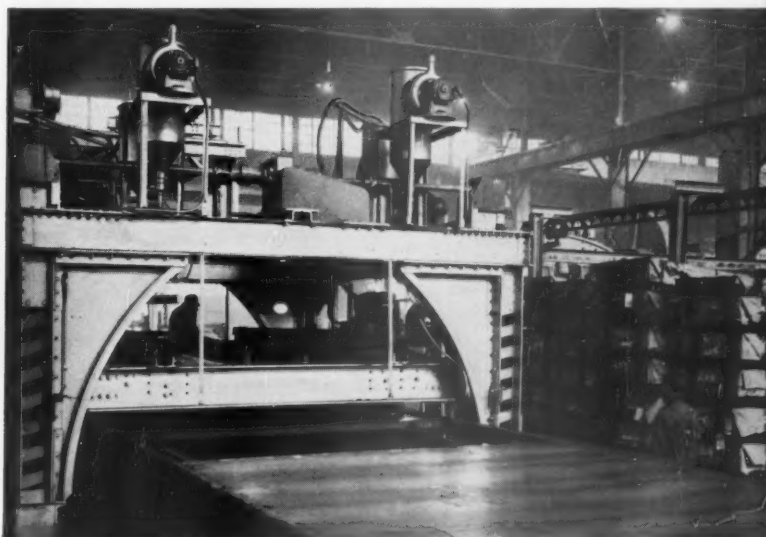


New type set-up jigs for center sill and underframe allow desirable down-hand welding, resulting in four-square car building.

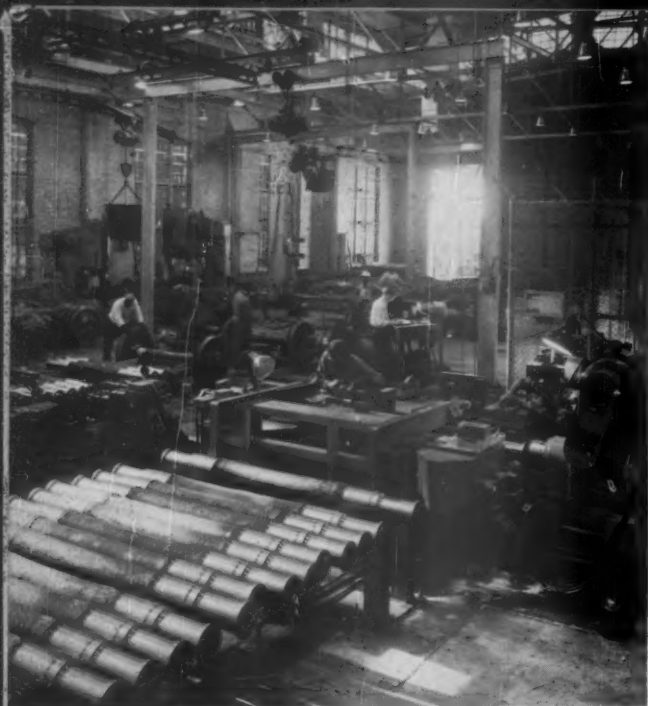
## MULTI-MILLION DOLLAR MODERNIZATION PROGRAM at the Q C f car building plant in St. Louis

To better serve the Railroads of the Midwest... Q C f is investing over two million dollars for new equipment and buildings at its St. Louis Car Building Plant. The new layout boasts the finest in machine shops, wheel and axle departments, giant jigs and automatic welding equipment...everything necessary for the economical *mass production* of freight cars.

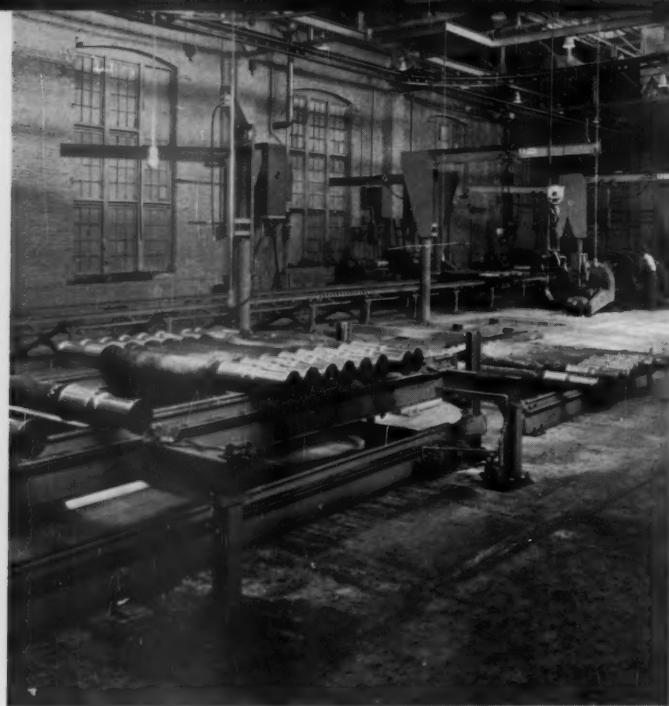
More important, the Q C f Plant at St. Louis has been bolstered by new talent...to back up the knowledge and skill of production specialists with years of experience...to assure the traditional high quality of Q C f Freight Cars in the future.



Huge gantries, used in welding the longitudinal seam along the top and bottom of the car sides, speed up production schedules...assure extra long service life in every Q C f Freight Car.



The all-new Wheel and Axle Department is equipped to mass produce standard axles as well as those with anti-friction bearings. Shown in the foreground are axles being processed on the Niles Hydraulic Burnisher.



Overhead tram-rail moves axles to the rear of inspection rack where they are lowered by elevator to the under-track. Here they feed directly to the wheel mounting press.

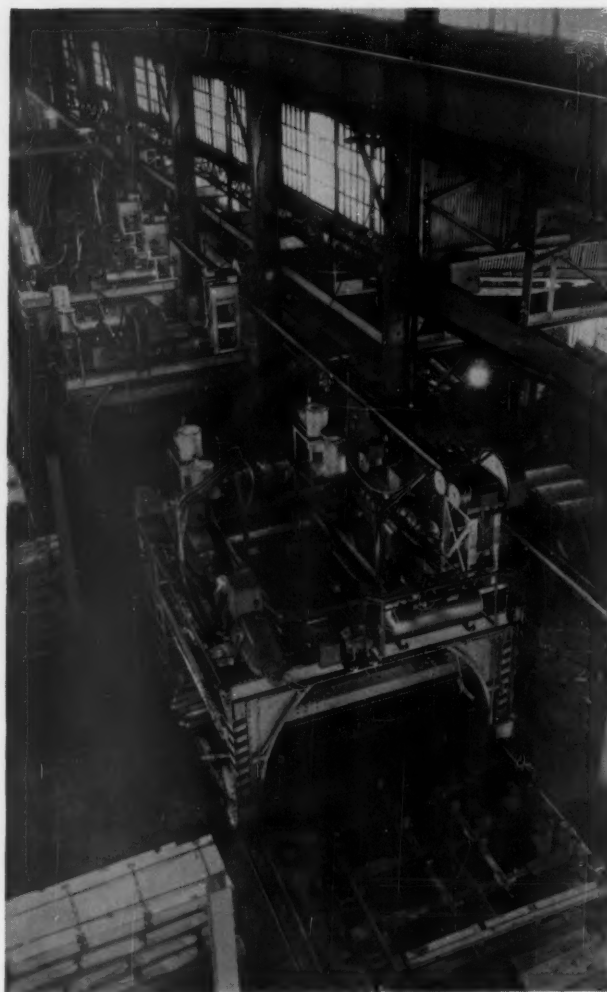
## QCF Streamlines Assembly-line Methods To Assure Greater Economies in Building Freight Cars

Pioneered at other QCF plants...the Assembly-Line Technique of building railroad cars is being fully applied at the ultra-modern St. Louis operation. Here you'll find standardization of design...specialization of tasks and skills...precision-cut parts and jig-registered sub-assemblies...everything needed for fast, economical production.

To further speed up work and keep down costs, the St. Louis plant has been equipped with the most advanced systems of overhead material handling, similar to those utilized throughout the automotive industry. At the press of a button, or movement of a lever...sub-assemblies are quickly distributed to the proper point along the primary assembly line.

No railroad shop in the country can surpass the economies resulting from this unique combination of modern tooling and modern methods!

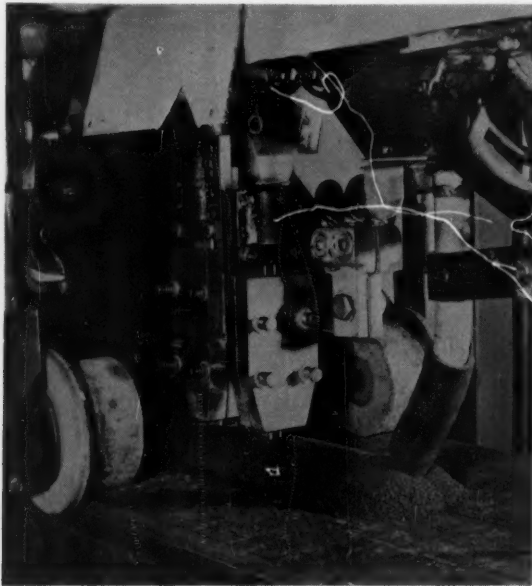
In addition to the production economies inherent in this *straight line* system...it is also ideally suited to QCF's close, step-by-step controls of rigid quality standards.



Modern, assembly-line methods are used in every operation from applying end sheets to spraying on final coat of paint...to keep down costs and provide uniform high quality.



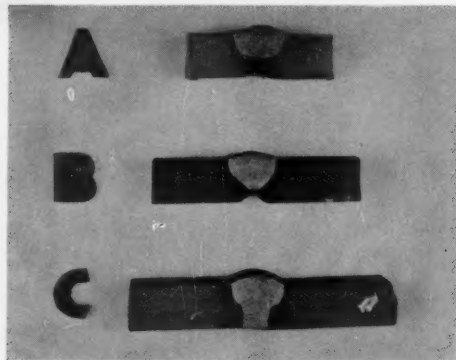
# Improved Automatic Welding Process Assures Maximum Strength in Center Sills



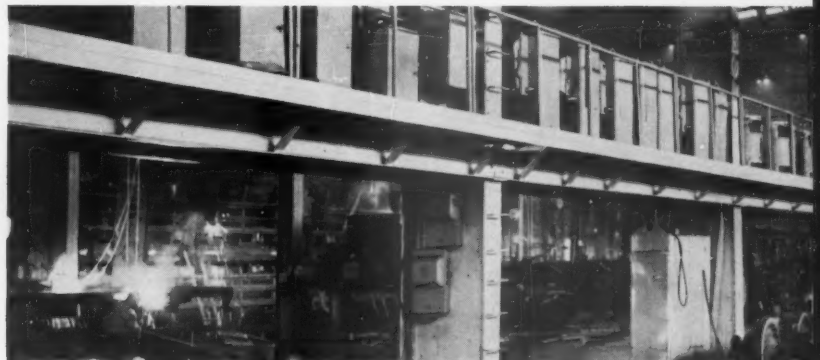
This close-up of gantry welding-head at center sill welding jig shows how welding penetration is accomplished with three arcs. Note the welding electrodes leading to the head directly under the gantry.



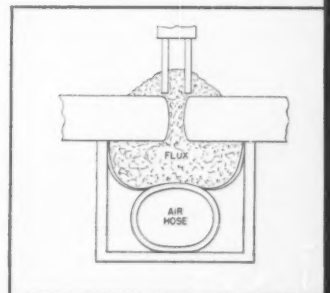
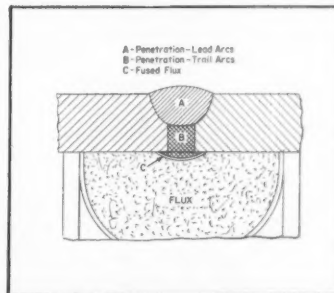
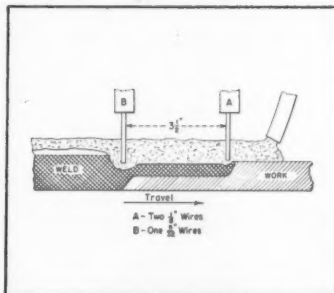
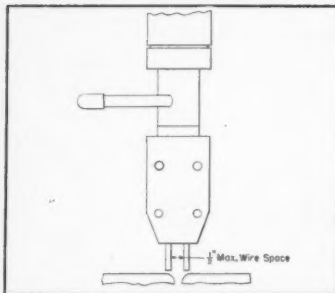
Hydraulically operated clamps each with roller contact, assure positive and accurate register of the center sill prior to welding.



Penetration of weld: (A) leading electrodes only with 1,350 amp, (B) leading electrodes 1,350 amp and trailing electrode with 600 amp, and (C) leading electrodes with 1,350 amp and trailing electrode with 900 amp.



No more cumbersome welding cables to tangle and hinder efficiency! No more awkward welding positions to possibly lower quality of workmanship! Welding transformers are mounted on overhead platforms with cables laid in out-of-the-way trenches, and the workpieces are conveniently positioned on hydraulic ramps.



Relation of electrodes and flux during the welding operation.

**Now ready to build  
over 25 cars daily  
to serve America's  
Railroads better than ever!**

The St. Louis modernization program is just another example of **QCF**'s faith in the future of America's Railroads...another reminder that **QCF** can deliver "more freight car per dollar". At the same time **QCF** is ready to go on sharing its engineering skills in the design of lighter, faster, more durable rolling stock that will help Railroads to reduce appreciably their operating costs...and win friends among shippers.

When you are ready to add new freight cars...remember that **QCF** is ready to serve your needs. Call in your nearby **QCF** Representative for complete information. **QCF** Industries, Incorporated, New York—Chicago—St. Louis—Washington—Cleveland—Philadelphia—San Francisco.



**acf**

**CAR BUILDERS TO AMERICA'S RAILROADS**



THREE PUBLIC RELATIONS DIRECTORS from operating brotherhoods joined three railroad public relations

officers in a precedent-setting panel session. The group focused attention on "areas of mutual benefit."

WITH THE PR OFFICERS . . .

## It's a Two-Front Strategy

Building public relations "instinct" in the industry, and winning support for Weeks' Report are major jobs ahead

Railroad public relations officers are ready to embark on a double-barreled campaign. One is a "selling campaign" to win greater recognition within the industry of the value of public relations. The other is a broader undertaking. It is, in short, the rallying of public opinion in an effort "to free our hampered railroads in their competitive struggle with pampered media of transportation."

The two undertakings took shape during the 1955 meeting of the Railroad Public Relations Association, held June 16-18 at the Broadmoor Hotel, Colorado Springs, Colo.

The three-day session was built around the theme, "The Big Look at Railroad Public Relations." It was natural that such a look should examine public relations both internally (our "inner public") and externally (the "outside public"). The job of improving relations with both publics seems to lie in creating wider public relations "instinct" among railroad officers and employees at all levels.

"I ask you to join me in a project, a very specific project," George C. Frank, outgoing RPRA president, said in the opening-day keynote speech. "I ask that starting this date we make a definite drive to pull up a whole chair for public relations to the 'administration' table."

Mr. Frank, who is assistant to president of the Erie, said the responsibility of public relations officers is to organize a specific educational campaign within their own companies to keep management public relations minded at the operational conference table, and employ-

ees public relations conscious at the public contact level.

"I believe," he declared, "that we can double, triple or quadruple [our] effectiveness if in our internal relations we can convince our people that in the eyes of the public there is no public relations substitute for good operation and good corporate behavior . . . To earn public goodwill, public relations should not be an adjunct to operations but a part of operations. . . ."

"I want to make it clear that I am not carrying the torch for the individual who may have the title of public relations director," Mr. Frank continued. "I am more concerned with the problem of implanting the seed of good public relations in the hearts and minds of our fellow railroaders."

### A New Model Panel

Nor was Mr. Frank alone in spelling out the need for a "selling campaign" to make every employee public relations minded. The following day a six-man panel, representing both labor and management (picture), turned out additional statements on the subject.

Members of the panel included public relations directors of three rail brotherhoods: Edward E. Gloss, Brotherhood of Locomotive Firemen & Enginemen; Irwin S. Lippe, Brotherhood of Railroad Trainmen, and Arthur B. Shenefelt, Brotherhood of Locomotive Engineers. Representing management's viewpoint were Ralph C. Champlin, vice-president, public relations, Pennsylvania; K. C. Ingram, assistant to the president, Southern Pacific, and





"RAILROADS have played a pioneer role in public relations, have served as a guide for other industries and have made distinctive contributions to the techniques of our craft," George M. Crowson, assistant to the president, Illinois Central, declared. Mr. Crowson is currently serving as president of the Public Relations Society of America.

Charles S. Pope, vice-president, Soo Line, who acted as moderator. The group talked of areas in which labor and management may work together to further the advance of the industry for their common benefit.

Mr. Lippe said he believes rail labor can help in the attainment of many railroad public relations goals.

"Every day our members in all parts of the United States and Canada get a much closer look at what the carriers are doing to win friends, influence people and get and hang onto customers than most management people, including yourselves," he said. "Their observations and viewpoints can be rail labor's most important contribution to improved public relations. Where you come in is in evaluating labor's criticism and suggestions and making sure they are heard at the policy level."

Mr. Shenefelt said the BLE believes there are matters which call for "less isolated workmanship and more advance planning between management and us." He referred specifically to the need for putting together a joint program backing the President's cabinet committee report. "We want to work with you wherever we can serve the industry together," he declared.

The BLE spokesman went on to recommend the creation of a joint labor-management agency for public relations and information.

Mr. Gloss pointed out that the effectiveness of rail labor organizations in promoting the industry's welfare lies "in our identity." He said that if management and labor agree to cooperate toward a common goal, such as passage of new transport legislation, the labor groups can be most effective if they retain clearly their own identity in such work.

Management members of the "common grounds" panel emphasized the need for greater cooperation. Mr. Champlin said management-labor relations often are "frozen," but, fortunately, there are signs of a thaw. "I see many of our public relations problems arising just because of our age," he declared.

The panel session served also to focus added attention on the so-called Weeks' Report, and the legislative battles which it will undoubtedly precipitate in coming months. In fact, while the RPRA meeting was in progress, announcement was made that railroad labor organizations, in a meeting in Washington, D. C., had agreed to join the carriers in supporting the general aims of the transportation report. This forthcoming "fight of the century," as one member called it, kept cropping up throughout the meeting.

Governor Edwin C. Johnson, another opening-day speaker, first broached the subject. He said he has been pleased by the "new attitude" in Washington, and added that the old transport policy was "just a lot of words" which did not apply to a free economy and a free enterprise system.

"So they have come up with something that is going to mean a 'new day' in transportation," the governor declared. "I don't go along with them all the way, but they do have the kernel of the right way to proceed. Monopoly in transportation is a thing of the past."

The governor was not alone in criticizing sections of the cabinet report. Lowe P. Siddons, traffic manager of Holly Sugar Corporation and president of the National Industrial Traffic League, told RPRA members on June 17 that every traffic manager with any knowledge at all of the Interstate Commerce Act and the rules that govern transportation, knows there are conflicting and impractical recommendations in both the report and in S.1920 (the bill in Congress to implement the report).

#### **Convince the Public**

The public relations officers got a different story from David I. Mackie, chairman of the Eastern Railroad Presidents Conference. Mr. Mackie said the report would give transportation the freedom to compete which has been applied across the board in the industrial world.

"It seems to me that your job as public relations officers of our industry is to bring to the American public the fact that this report was written in *its* interest," Mr. Mackie said. "Its underlying philosophy is merely a reiteration of the American way and an application to transportation of fundamental principles which have proved their validity in all other areas of our economy."

Other speakers at the RPRA meeting included two educators, both specialists in communications and semantics—Dr. Elwood Murray, Director of the School of Speech, University of Denver; and Dr. S. I. Hayakawa of the University of Chicago. George C. Crowson, assistant to the president, Illinois Central, discussed the railroad impact in public relations. Palmer Hoyt, editor and publisher of the "Denver Post," made the address at the annual dinner, and Milton E. Bernet, vice-president of the Mountain States Telephone & Telegraph Co., told how his company looks at the public relations job.

New officers for RPRA for the coming year include President B. E. Young, assistant to president of the Southern, succeeding Mr. Frank. J. Hampton Baumgartner, manager of public relations, Delaware, Lackawanna & Western; W. E. Rachels, director of public relations, Seaboard Air Line; and R. J. Maxwell, director, publicity and advertising, Missouri Pacific, were elected vice-presidents for the Eastern, Southern and Western regions, respectively. J. Don Parel, manager, agricultural relations, AAR, was re-elected secretary-treasurer.

# Every person who reads this

stands to benefit by more economical,  
more efficient and more modern transportation—**IF...**

**IF** the principles and purposes embodied in the report of the Presidential Advisory Committee on Transport Policy and Organization are carried out.

The committee reported that the national policy for regulating transportation is outmoded, and is causing needlessly high costs of transportation . . . costs which are borne, finally, by YOU as an ultimate consumer.

The committee recommends that all types of transportation be given the right to price their services in fair and open competition with one another — something which not all of them can do now.

It will be good for you and everyone else when every kind of carrier is competing for your business with the finest, the most efficient, and the most economical service each can offer.

What is needed now is the passage of legislation to put into effect the principles and purposes of the committee's report.

**Association of American Railroads**  
WASHINGTON, D. C.

## Financial

(Continued from page 16)

penditures of not more than \$123,508,334. This would include approximately \$12,000,000 for branch line construction; \$45,000,000 for additions and betterments; and \$61,000,000 for new equipment, with present equipment worth about \$20,000,000 scheduled for retirement. Under the second measure, the minister of finance would be authorized to guarantee principal and interest on CNR securities not exceeding \$115,999,000.

## Investment Publications

[The surveys listed herein are for the most part prepared by financial houses for the information of their customers. Knowing that many such surveys contain valuable information, *Railway Age* lists them as a service to its readers, but assumes no responsibility for facts or opinions which they may contain bearing upon the attractiveness of specific securities.]

**Calvin Bullock**, One Wall st., New York 5.

*Reconstructed Railroads. Perspective*, May 16.

**Fahnestock & Co.**, 65 Broadway, New York 4.

*Pennsylvania Railroad Co. Weekly Review*, May 31.

**R. W. Pressprich & Co.**, 48 Wall st., New York 5.

*Railroad Equipment Debt Maturities vs. Depreciation Charges*.

**Smith, Barney & Co.**, 14 Wall st., New York 5.

*1954 Railroad Margins of Safety and Times Charges Earned. Railroad Bulletin No. 192*, May 16.

*Leverage Positions of Railroad Common Stocks; the Arithmetic of Railroad Shares. Railroad Bulletin No. 193*, June 2.

*Northern Pacific Railway Company. Railroad Bulletin No. 194*, June 20.

**Vilas & Hickey**, 49 Wall st., New York 5.

*Railroad Bonds that Replaced Stocks. June 16.*

## Securities

**Baltimore & Ohio.—Refunding Plan.**—In connection with this road's refunding plan (*Railway Age*, February 7, page 55), the ICC has extended to June 30, 1957, the expiration date of its authorization to pledge and repledge \$415 million of securities. The authorization permits pledging and repledging of any or all of the securities which the B&O may reacquire and hold uncanceled as collateral for short term notes. Securities affected by the commission's order include: \$76,922,350 of first mortgage bonds, series A; \$67,826,500 of first mortgage bonds, series B; \$37,285,000 of Southwestern

division bonds, series A; \$36,798,000 of Pittsburgh, Lake Erie & West Virginia system bonds, series A; \$10,028,700 of Toledo-Cincinnati division bonds, series D; \$122,639,000 of refunding and general mortgage bonds; \$61,906,000 of convertible bonds; and \$1,583,000 of Pittsburgh, Lake Erie & Western bonds, series A.

## Security Price Averages

	June 21	Prev. Week	Last Year
Average price of 20 representative railway stocks	98.46	98.91	66.71
Average price of 20 representative railway bonds	99.09	98.85	95.04

## Dividends Declared

**CANADA SOUTHERN.**—\$1.50, semiannual, payable August 1 to holders of record June 24, in Canadian funds, tax deductible at source.

**CANADIAN PACIFIC.**—common, 7½¢, interim, payable August 1 to holders of record June 23, in Canadian funds, tax deductible at source.

**COLORADO & SOUTHERN.**—4% first non-cumulative preferred, \$2, payable July 19 to holders of record June 28; \$2, payable September 22 to holders of record September 1.

**MAINE CENTRAL.**—6% prior preferred, \$1.50, quarterly, payable July 1 to holders of record June 24.

**NORTHERN CENTRAL.**—\$2, semiannual, payable July 15 to holders of record June 30.

**NORWICH & WORCESTER.**—8% preferred, \$2, quarterly, payable July 1 to holders of record June 15.

**PITTSBURGH & LAKE ERIE.**—\$1.50, quarterly, payable July 15 to holders of record June 24.

**RICHMOND, FREDERICKSBURG & POTOMAC.**—common, 7½¢, quarterly; dividend obligations, 7½¢, quarterly; both payable July 5 to holders of record June 24.

## Application

**NORTHERN PACIFIC.**—To assume liability for \$5,160,000 of equipment trust certificates to finance in part acquisition of the following equipment, at an estimated total cost of \$6,450,800:

Description and Builder	Estimated Unit Cost
200 50-ton box cars (Northern Pacific Brainerd, Minn., shops) .....	\$ 7,925
1 1,600-hp diesel-electric switcher (Aico Products Corporation) .....	151,000
20 1,750-hp diesel-electric road-switchers (Electro-Motive Division, General Motors Corporation) ..	164,840
2 7,000-hp diesel-electric freight locomotives (Electro-Motive) ...	709,000

The certificates, dated June 16, would mature in 15 annual installments of \$344,000 each, beginning June 15, 1956. They would be sold by competitive bidding with interest to be determined by such bidding.

**NORTHERN PACIFIC.**—To assume liability for \$2,820,000 of equipment trust certificates to finance in part purchase of the following equipment at an estimated total cost of \$3,528,700:

Description and Builder	Estimated Unit Cost
300 50-ton box cars (Northern Pacific, Brainerd, Minn., shops) .....	\$ 7,925
5 1,750-hp diesel-electric road-switchers (Electro-Motive Division, General Motors Corporation) ..	164,840
3 1,200-hp diesel-electric switchers (Electro-Motive) .....	109,000

The certificates, to be dated July 14, would mature in 15 annual installments of \$188,000 each beginning July 14, 1956. They would be sold at competitive bidding with the interest rate to be determined by such bidding.

## Authorizations

**DULUTH, SOUTH SHORE & ATLANTIC.**—To issue four promissory notes of \$86,714 each in connection with purchase of a 14-mile line of

road between Bergland, Mich., and White Pine, from the White Pine Copper Company. The road built the line for the copper company and operates it (*Railway Age*, December 20, 1954, page 26). The notes, representing partial payment of \$346,856 for the line, will bear interest at 3% and are to mature successively on January 1 of the years 1956 through 1959. The road will pay in cash \$173,428, representing one-third of the total net purchase price of \$520,285, plus \$52,944 in cash to cover interest on advances from the copper company. It will receive a credit of \$272,485 covering rail and other track materials which it is to convey to the copper company.

**MISSOURI PACIFIC.**—To assume liability for \$2,925,000 of equipment trust certificates to finance in part purchase of 500 box cars and 50 flat cars at an estimated total cost of \$3,581,325 (*Railway Age*, May 23, page 14). Division 4 approved sale of the certificates at an interest rate of 3¼% for 99.309% the bid of Halsey, Stuart & Co. and two associates—which will make the annual cost of the proceeds to the road approximately 3.39%. The certificates, dated June 15, will mature in 15 annual installments of \$195,000 each beginning June 15, 1956.

## Railway Officers

**CHICAGO & EASTERN ILLINOIS.**—James Ratcliffe has been named general agent at Vancouver, B.C. He formerly served with the Canadian Pacific as chief rate clerk there.

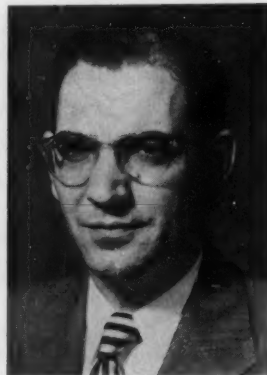
**CLINCHFIELD.**—M. L. Fluck has been appointed district freight agent at Cincinnati, succeeding P. J. Kelly, deceased.

**DENVER & RIO GRANDE WESTERN.**—Robert O. Bardwell has been named nuclear engineer at Denver.

**DULUTH, SOUTH SHORE & ATLANTIC.**—Roy J. Baer has been appointed general agent at Chicago.

**ERIE.**—Fay G. Hill has been appointed supervisor of stations and car service, Mahoning division, succeeding C. H. Schlegel, who has been named freight agent at Cleveland.

**FRISCO.**—B. J. Lutzenberger,



**FRISCO.**—H. B. Parker, assistant to president at St. Louis, has been appointed assistant vice-president accounting.



conductor, has been appointed safety supervisor at Tulsa, Okla.

**W. W. Francis** has been appointed superintendent, River division, at Chaffee, Mo., and **H. C. Bitner** has become superintendent, Western division, at Enid, Okla. **V. J. Deckard** has been named superintendent terminals at Tulsa, Okla.

**ILLINOIS TERMINAL.**—**H. F. Simmons** has been appointed assistant general freight agent (divisions) at St. Louis, succeeding the late **G. I. Moseley**.

**MILWAUKEE.**—**L. H. Rabun** has been appointed master mechanic at Milwaukee; **J. L. Brossard**, master mechanic Twin City terminals at Minneapolis; **Carl McMullin**, district general car foreman at Miles City, Mont., and **D. A. Radabaugh**, assistant master mechanic at Harlowton, Mont.

**NEW HAVEN.**—**Richard C. Stanley**, general passenger agent, has been named passenger traffic manager, with headquarters as before at New York. **Albert E. Spette**, assistant general passenger agent, succeeds Mr. Stanley as general passenger agent. **John F. Davis** has been promoted to succeed Mr. Spette as assistant general passenger agent. **Charles F. Clark**, who has been in charge of the annual movement of thousands of children between New York and camps in New England, has been named assistant general passenger agent—suburban. **Robert K. Allen**, chief clerk to passenger agent at Boston, has been named administrative assistant there.

**George P. McCallum** has been appointed resident public relations manager at New York.

**NEW YORK CENTRAL.**—**John Dan**, general agent at Cleveland, has been appointed manager industrial development at that point, succeeding **Douglass Campbell**, whose appoint-



**Douglass Campbell**

ment as assistant to president—customer services was noted in *Railway Age* June 13. **Carl R. Heinisch** succeeds Mr. Dan as general agent at Cleveland. **Charles V. Sheriff**, gener-

al freight agent, has been promoted to the new position of assistant freight traffic manager, with headquarters as before at Cincinnati.

**T. A. Seymour**, acting assistant general manager—labor relations at Syracuse, has been appointed assistant general manager—labor relations at that point, succeeding **W. V. McCarthy**, who has retired after 46 years of service.

**NORFOLK & WESTERN.**—**E. A. Manetta**, personnel assistant—mechanical, motive power department, has been named assistant superintendent motive power—personnel at Roanoke, Va., succeeding to the duties of the late **O. F. Hark**, assistant general superintendent motive power—personnel.

**PITTSBURGH & WEST VIRGINIA.**—**Albert H. Graham**, assistant vice-president and treasurer at Pittsburgh, has been elected vice-president, secretary and treasurer. **Charles**



**Albert H. Graham**



**Charles A. Thoma**

**A. Thoma**, assistant vice-president—sales, has been elected vice-president—traffic.

Mr. Graham was born at Pittsburgh, October 24, 1908, and attended Williams College (B.S., 1932) and Harvard University Graduate School of Business Administration (M.B.A., 1934). He entered railroad service with the



**SOUTHERN.**—**Karl C. Shults** has been appointed general superintendent transportation at Cincinnati, as reported in *Railway Age* June 13.

P&WV in December 1938 as clerk in the transportation department and later served as statistician in that department, special representative in traffic department, assistant to president, assistant to vice-president—traffic, traffic manager—sales and service, and general traffic manager. Mr. Graham became assistant vice-president and treasurer last January.

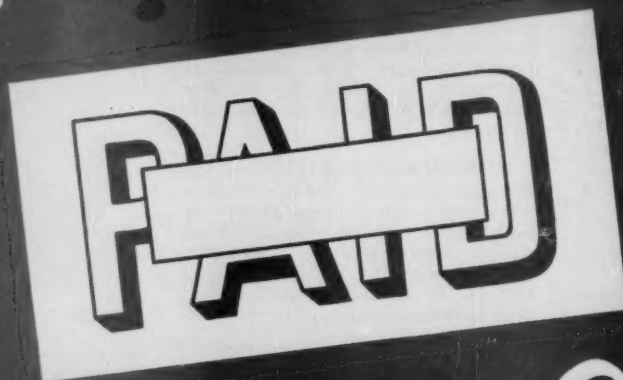
Mr. Thoma was born at Nutley, N.J., February 16, 1912, and entered railroad service in 1934 with the Denver & Rio Grande Western, serving as stenographer, rate clerk, chief clerk and city freight agent until 1945. From 1945 to 1948 he was a traffic consultant in private practice. Mr. Thoma joined the P&WV in 1948 as commercial agent, later serving as general agent, general eastern agent and traffic manager. He was appointed assistant vice-president—sales at the beginning of this year.

**SEABOARD.**—**J. L. Sturdivant**, commercial agent at New Orleans, has been named general agent at Memphis, succeeding **N. C. Osborn**, who has been assigned to special duties.

**UNION PACIFIC.**—**Edwin C. Schafer**, assistant to general director of public relations, has been appointed director of public relations at Omaha.

**John C. Stromberg** has been appointed district freight and passenger agent at Medford, Ore.

**WABASH.**—**A. P. MacInnis**, general freight agent at St. Louis, has retired after more than 48 years of railroad service, including 35 with the Wabash. Mr. MacInnis's successor is **R. F. Stapleton**, assistant general freight agent at Detroit. **F. A. Betancourt, Jr.**, perishable freight agent at Detroit, has been named division freight agent there. **B. B. Bullington**, traveling freight agent at Minneapolis, has been appointed general agent, freight department, at Tulsa, Okla., replacing **G. D. Wright**, who has retired after more than 38 years of service.



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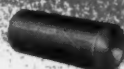


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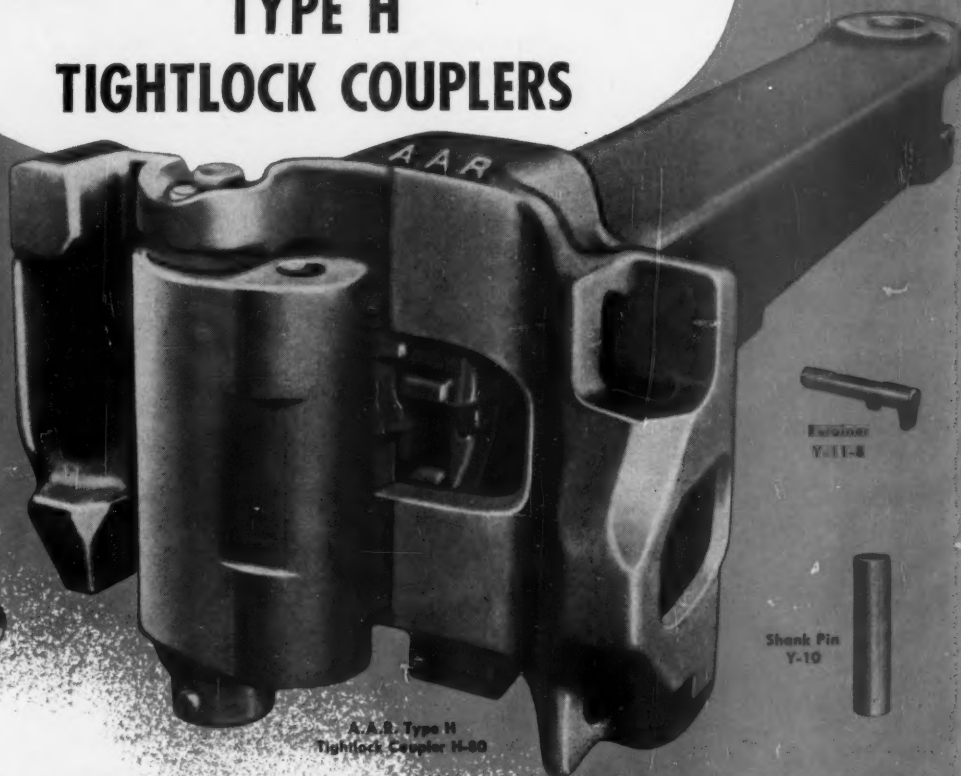
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